D'YACHKOV, A. K.

Kak obespechit' khoroshuiu nadezhnuiu rabotu podshipnika. Moskva, AN SSSR, 1942. 50 p. diagrs.

How to secure a thorough and safe performance of bearings.

DLC: TJ1063. D5

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

D'YACHKOV, A.

USSR/Crankshafts
Engines, Automobile

Jun 1947

"Reducing Wear and Tear on the Crank Gear Assembly of the Ford 2G8T Motor," A. Orlin, Dr of Technical Sciences, A. D'yachkov, Candidate in Technical Sciences, 2 pp

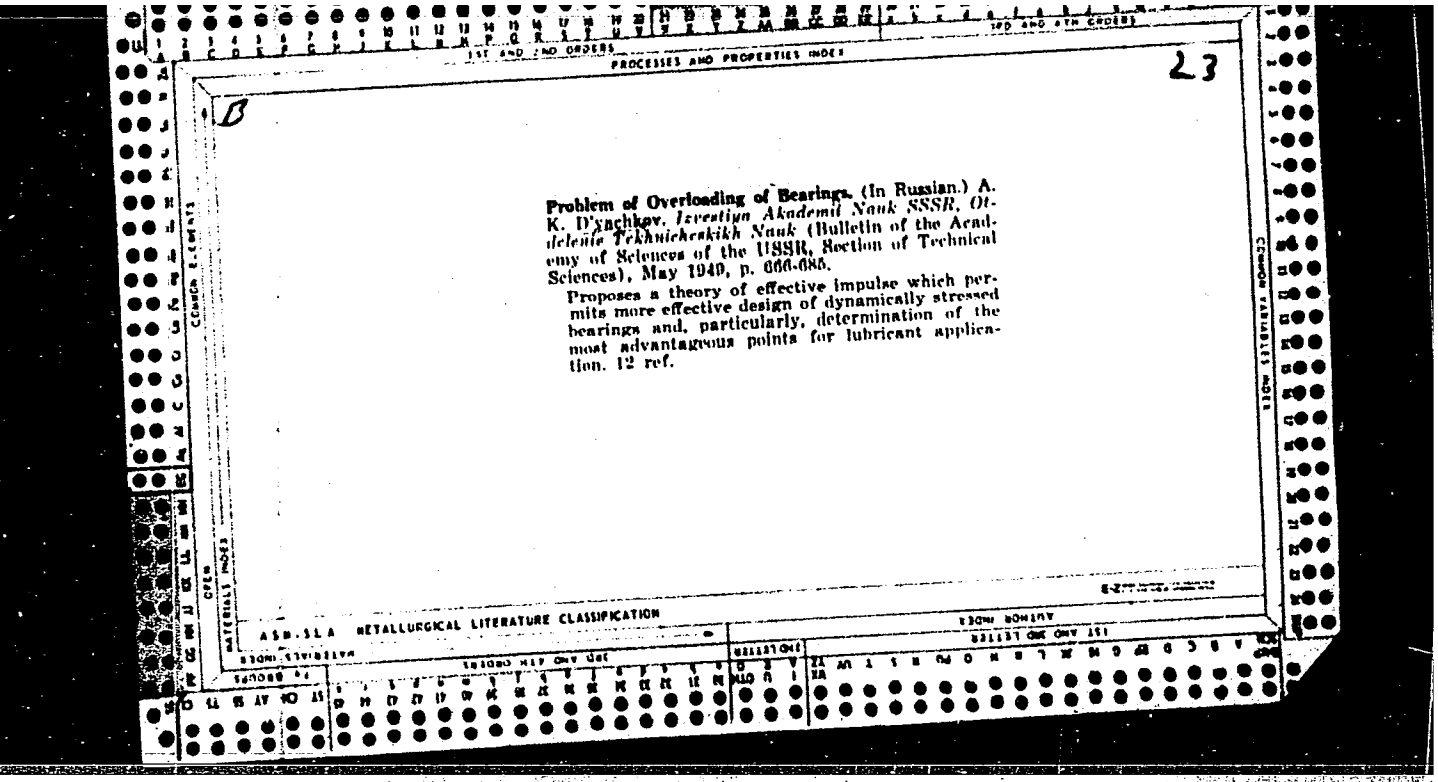
"Avtomobil'" Vol XXV, No 6

Recommends use of improved oil pump which increases oil pressure. Includes diagrams.

PA 12T24

D'YACHKOV, A. K.

"Studies in the Field of Dynamically Loaded Bearings. Study of the Effect of the Relationship of Lubricant Viscosity to Pressure on Slippage Bearing Performance Readings in Cases of Static Loading." Symposium IV, Friction and Wear in Machines, Academy of Sciences USSR, 1949.



PROCESSES AND PROPERTIES INDEX

23

B

Problem of Overloading of Bearings. (In Russian.) A. K. D'yachkov. *Izvestiya Akademii Nauk SSSR, Otdeleniie Tekhnicheskikh Nauk* (Bulletin of the Academy of Sciences of the USSR, Section of Technical Sciences), May 1949, p. 666-685.

Proposes a theory of effective impulse which permits more effective design of dynamically stressed bearings and, particularly, determination of the most advantageous points for lubricant application. 12 ref.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

D'YACHKOV, A. K.

185T40

USSR/Engineering - Machine Science Feb 51

"Improving the Performance and Increasing the Life of Sliding Friction Bearings," A. K. D'yachkov, Inst Mach Studies, Acad Sci USSR

"Iz Ak Nauk, Otdel Tekh Nauk" No 2, pp 196-208

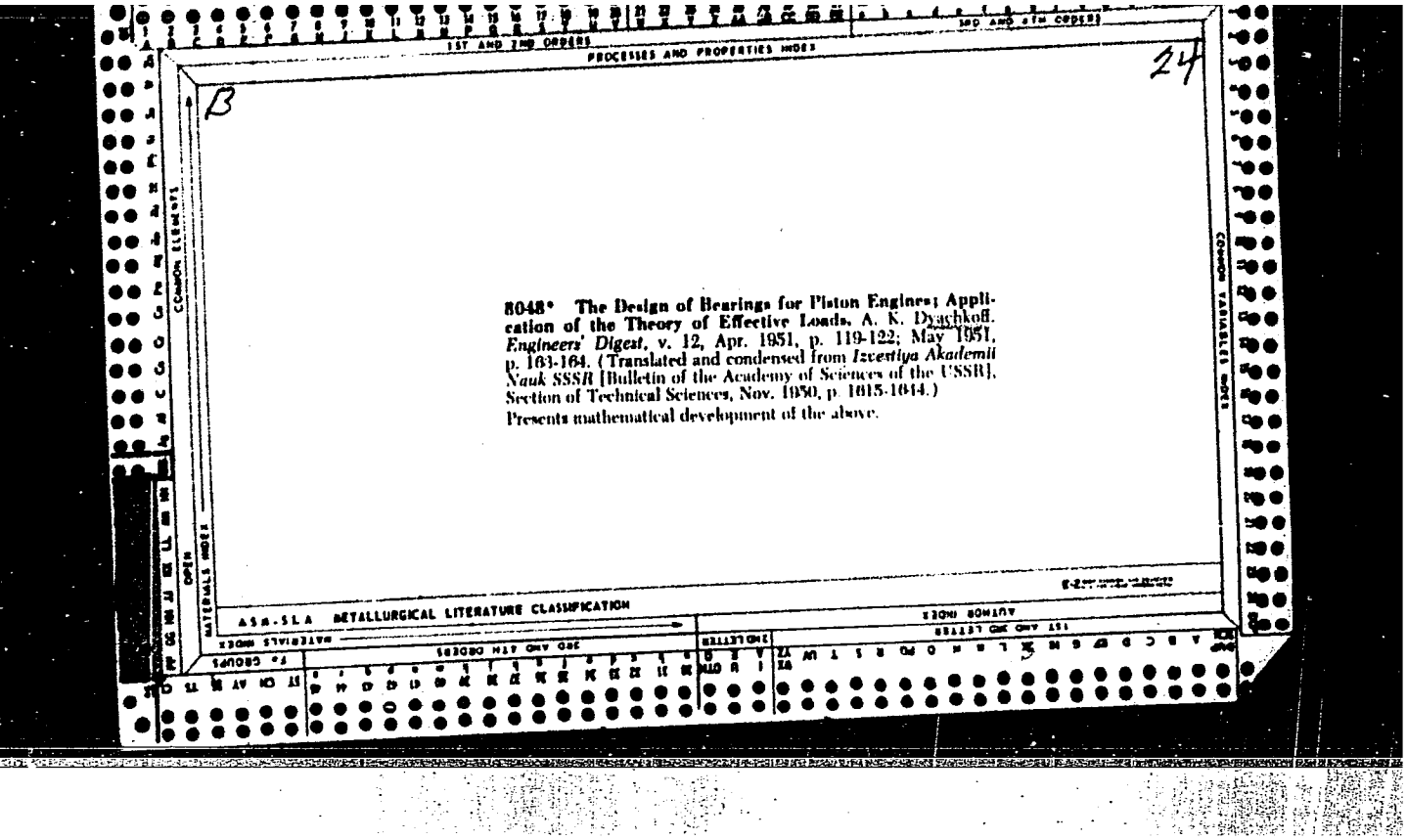
Theory of effective loads and expts (facilitate calcn of proper distribution of lubricating holes under any complex form of loading. Develops methods for detg rational modifications in shape of longitudinal and transversal sections of lining openings and optimum viscosity of lubricant, suitable for

185T40

USSR/Engineering - Machine Science (Contd) Feb 51

given mach. These factors provide for improving temp condition of performance and decreasing overheating of hot zones of bearings. Submitted by Acad Ye. A. Chudakov.

185T40



8048* **The Design of Bearings for Piston Engines; Application of the Theory of Effective Loads.** A. K. Dyachkoff. *Engineers' Digest*, v. 12, Apr. 1951, p. 119-122; May 1951, p. 163-164. (Translated and condensed from *Izvestiya Akademii Nauk SSSR* [Bulletin of the Academy of Sciences of the USSR], Section of Technical Sciences, Nov. 1950, p. 1615-1644.)
Presents mathematical development of the above.

1. D'I'CHKOV, A.K.

2. USSR (600)

4. Bearings (Machinery)

7. Answering S.N. Kutsayey's remarks. Izv. AN SSSR Otd. tekh. nauk. no. 9. 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

1. D'YACHKOV, A. K., DR. - OSTROVSKIY, I. V.

2. USSR (600)

4. Cranks and Crankshafts

7. Improved working quality of bearings and cranks of the D-35 tractor engine crankshaft. Avt.trakt.prom. no. 11, 1952

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Unclassified.

DEACHKOV, A. K.

KP-1062 (Science-industry cooperation in machine studies) Abridged from: Iz opyta sodruzhestva nauki i proizvodstva.
Vestnik Akademii Nauk SSSR, 22(4): 15-19, 1952.

1. [redacted], A. P.

2. USSR (600)

4. Cranks and Crankshafts

7. Calculation of crankshaft counter weights in automobile and tractor engines, Avt. trakt. prom. No. 3, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

D'YACHKOV, A.K.

Determining the quality of a lubricant by new method. Tren. i izn. mash. no.7:238-260 '53. (MLRA 9:9)
(Lubrication and lubricants)

USSR/ Engineering - Lubrication tests

Card 1/1 Pub. 128 - 2/26

Authors : Dyachkov, A. K.

Title : Determining the expenditure (flow) of a lubricant through a bearing

Periodical : Vest. mash. 2, 12-19, Feb 1954

Abstract : The editorial reports on operational tests conducted by the Institute of Machine Construction at the Academy of Sciences of the USSR, to determine the expenditure and flow of lubricants through bushing-type bearings. Five USSR references (1947-1951). Graph; drawings; diagrams.

Institution : .....

Submitted : .....

DYACHKOV, A.K.

USSR/Miscellaneous - Engines

Card 1/1 : Pub. 124 - 9/24

Authors : Dyachkov, A. K., Dr. of Techn. Sc.

Title : Increase in service life of tractor engines

Periodical : Vest. AN SSSR 9, 59-60, Sep 1954

Abstract : Measures for increasing the service life of tractor engines, as proposed by the Institute of Machine Construction of the Academy of Sciences USSR, are listed.

Institution : Academy of Sciences, USSR, Institute of Machine Construction

Submitted : ...

USSR/Engineering - Hydrogenerators FD-2999

Card 1/1 Pub. 41 - 12/12

Author : D'yachkov, A. K.

Title : Work in the field of "Development of a hydrodynamic theory of lubrication in conjunction with the improvement of the vertical thrust bearings in large hydro-generators.

Periodical : Izv. AN. SSSR. Otd Tekh Nauk, 3, 160, March 1955

Abstract : A hypothesis on the research, and work that has been done to improve the working surfaces of the vertical thrust bearing in a hydro-generator. The author states that new designs of the bearing surfaces and their machining are being tested at this time. The most important factor, however, in solving the problem of excessive wear is the high temperature developed by the bearing as a whole, and particularly in spots, through radiation of heat from adjoining parts. To solve this, a better pressure-lubricating system is recommended, which will distribute the lubricant more evenly over the whole bearing, and will also aid in dissipating the heat.

Institution : Institute of Machine Science, Academy of Science, USSR

Submitted :

D'YACHKOV, A. K.

USSR/ Engineering - Performance tests

Card 1/1 Pub. 128 - 2/28

Authors : D'yachkov, A. K., Dr. of Mech. Sc., Prof.

Title : Investigating the operation of footstep bearing thrust blocks during starting

Periodical : Vest. mash. 35/6, 9 - 13, June 1955

Abstract : A series of tests were conducted by the Machine Construction Institute of the Acad. of Sc., USSR to determine the influence of the change in surface temperature, specific pressure, torque and correction factors on the operational characteristics of a footstep bearing thrust blocks. Tests and testing machines are briefly described, and technical data is given. Two references: 1 USSR, and 1 USA (1947 and 1953). Graphs; drawings; diagram; table.

Institution : .....

Submitted : .....

USSR/Engineering - Bearings FD-3030

Card 1/1 Pub. 41 - 14/15

Author : D'yachkov, A. K., Moscow

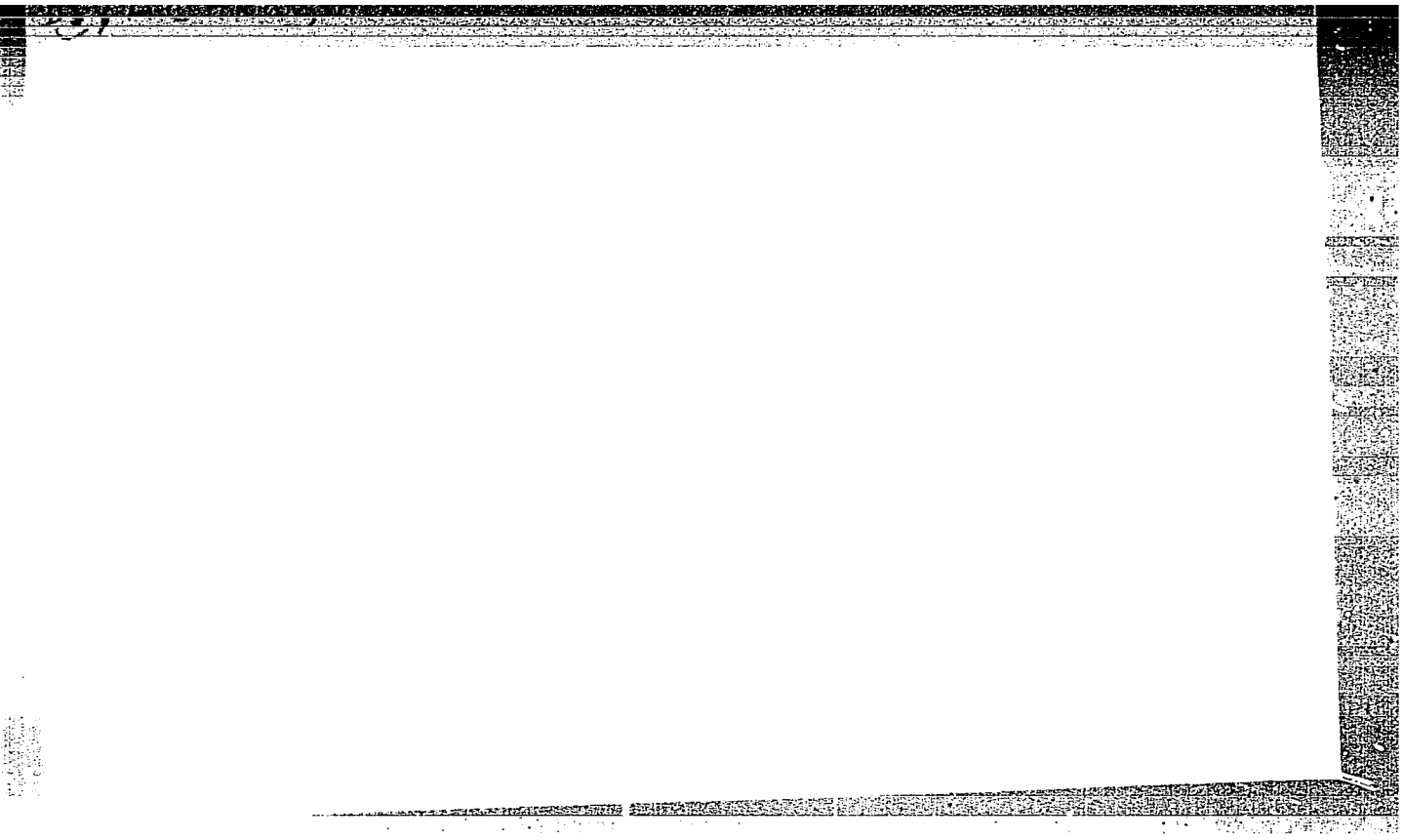
Title : Application of the method of recording temperature fields created near bearing surfaces to the improvement of footstep bearings.

Periodical : Izv. AN SSSR, Otd. Tekh, Nauk 9, 170-174, Sep 55

Abstract : Describes test machine at the Institute of Machine Science, Acad Sci USSR which simulates operation of a footstep bearing in a large hydrogenerator. Results obtained with the aid of this machine facilitate determination of hot spots in bearing surfaces. Presents data on temperature fields. Drawings. Three references, 2 USSR.

Institution:

Submitted : May 18, 1955



APPROVED FOR RELEASE: 08/22/2000 CIA-RDP86-00513R000411710013-3"

D'YACHENKO, P.Ye., doktor tekhnicheskikh nauk; D'YACHKOV, A.K., doktor tekhnicheskikh nauk, redaktor; ETERMAN, A.I., redaktor; MAKUNI, Ye.V., tekhnicheskiy redaktor.
[Radioactive isotopes in machine building] Radioaktivnye izotopy v mashinostroenii. Moskva, Izd-vo Akademii nauk SSSR, 1956. 50 p. (MLRA 9:6)
(Radioisotopes--Industrial applications)(Physical metallurgy) (Machinery industry)

VLADZIYEVSKIY, A.P., kandidat tekhnicheskikh nauk; D'YACHKOV, A.K., doktor tekhnicheskikh nauk, professor; ZAYCHENKO, I.Z., kandidat tekhnicheskikh nauk; KAMINER, N.M., inzhener; MAZYRIN, I.V., inzhener; NIBERG, N.Ya., kandidat tekhnicheskikh nauk; OSHER, R.N., inzhener; DIKUSHIN, V.I., akademik, redaktor; GLINER, B.M., redaktor, inzhener; MODEL', B.I., tekhnicheskiy redaktor; SOKOLOVA, T.F., tekhnicheskiy redaktor.

[Lubrication of metal cutting machines; reference manual] Smazka metallorezhushchikh stankov; spravochnoe posobie. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1956. 210 p. (MLRA 9:5)
(Lubrication and lubricants) (Machine tools)

DYACHKOV, A.K.

GROZIN, B.D., otvetstvennyy redaktor; DRAYGOR, D.A., redaktor; DIYACHKOV, A.K., redaktor; SEREDENKO, B.N., redaktor; SERENSEN, S.V., redaktor; FAYNERMAN, I.D., redaktor; SOROKA, M.S., redaktor izdatel'stva; RUDENSKIY, Ya.V., tekhnicheskiy redaktor

[Increasing resistance to wear and length of service in machines] Povyshenie iznosostoikosti i sroka sluzhby mashin. Kiev, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 414 p. (MIRA 10:1)

1. Vsesoyuznoye nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Kiyevskaya oblastnaya organizatsiya. (Machinery industry)

D'YACHKOV, A.K., doktor tekhnicheskikh nauk, professor.

Answer to S.N.Kutsaev's article. Vest.mash.36 no.12:21-23 D '56.
(Bearings (Machinery)) (MLRA 10:2)
(Lubrication and lubricants)

D'YACHKOV, A.K., doktor tekhnicheskikh nauk, professor; BUSHE, N.A., kandidat tekhnicheskikh nauk; BEGIDZHANOVA, A.P., kandidat tekhnicheskikh nauk; ABRAMOV, P.G., inzhener; DVOSKINA, V.A., inzhener; LUK'YANCHIKOV, I.K., inzhener.

"Antifriction alloys" by A.I. Shpagin. Reviewed by A.K. D'iachkov and others. Vest. mash. 37 no.7:89-91 Jl '57. (MLRA 10:8)
(Alloys) (Shpagin, A.I.)

D'YACHKOV, A.K.

ACHERKAN, N.S., zasluzhennyy deyatel' nauki i tekhniki, red.; D'YACHKOV, A.K., doktor tekhn.nauk, red.; RESHETOV, D.N., doktor tekhn.nauk, red.; GOKUN, V.B., red.; SOKOLOVA, T.F., tekhn.red.

[Theoretical principles of machine design; a collection of articles] Teoreticheskie osnovy konstruirovaniia mashin; sbornik. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1957. 419 p. (MIRA 11:2)
(Machinery--Design)

AUTHOR: Dyachkov, A.K., Doctor of Technical Sciences, Professor.

TITLE: Investigations of the possibilities of operation of thrust bearings at high specific pressures. (Issledovanie Vozmozhnosti raboty upornykh pyat na povyshennykh.)

PERIODICAL: "Energomashinostroenie", (Power Machinery Construction), 1957, No. 3, pp. 17 - 21, (U.S.S.R.)

ABSTRACT: The results are described of experimental investigations of the operation of thrust bearings at high specific pressures, as applicable to large, hydraulically-driven generators. Experiments were carried out involving loads of up to 100 tons. The bearing was of the self-aligning type. The test set-up was described in greater detail in an earlier paper, (1). In this paper, the results are described which were obtained during starting as well as during normal operation. The segments were of conventional shapes, as well as of modified shapes, as shown in Fig. 1. The load was applied to a steel disc whilst the segments were provided with a babbite coating. In the here described tests, the design of the supporting segments was modified taking into consideration earlier results, namely, a hyperbolic slope and a diagonal distribution of the rounding-off at the oncoming and offcoming edges was adopted, as shown in Fig. 1. During one series of tests, the segments were run-in with the disc during 440 hours, using specifice pressures between 10 and 70 kg/cm^2 and speeds of 4 to 13 m/sec;

Investigations of the possibilities of operation of thrust bearings at high specific pressures. (Cont.)

as a result of this, deviations from the originally-designed surface occurred. In another series of tests, the running-in period was reduced to 50 hours. In Fig. 2, the friction characteristic as a function of the specific pressure is plotted for the starting of the machine for specific pressures of up to 60 kg/cm^2. In Fig. 3, the starting friction coefficient is plotted as a function of the specific pressure on the bearing surface. Fig. 6 gives the change of the friction coefficient during normal operation as a function of the specific pressure (up to about 80 kg/cm^2) for a high viscosity and for a low viscosity lubricating oil. Figs. 4 and 5 give the reproduction of the temperature fields measured near the friction surface for various average specific pressures and relative speeds for high viscosity and for low viscosity oils. The test results indicate that it is possible to obtain reliable operation for designs as shown in Fig. 1 and specific pressures up to 80 kg/cm^2. For this purpose, it is imperative to exclude all the factors which may lead to a local overheating of the rubbing surface, i.e. overload due to deformations in the base frame, penetration of water and, which is of particular importance, contamination or foaming of the lubricating oil, stoppage of the flow of lubricant due to hydraulic shocks, etc. 6 figures, including graphs. 2 Russian references.

PHASE I BOOK EXPLOITATION 625

D'yachkov, Aleksey Konstantinovich

Treniye, iznos i smazka v mashinakh (Friction, Wear and Lubrication of Machinery) Moscow, Izd-vo AN SSSR, 1958. 157 p. (Akademiya nauk SSSR. Nauchno-populyarnaya seriya) 20,000 copies printed.

Resp. Ed.: Artobolevskiy, I.I., Academician; Ed. of Publishing House: Burkov, M.S.; Tech. Ed.: Guseva, I.N.

PURPOSE: This book is intended for technical personnel working in the field of operating, repair, and manufacture of tractors, Diesel locomotives, automobiles and other machinery.

COVERAGE: The book presents basic characteristics of friction, wear and lubrication of machine parts and also discusses the most important properties of lubricating oils and their requirements. Major causes of increased wear and means of preventing it as applied to the parts of internal combustion engines, i.e., cylinders, piston rings, journal and crankshaft bearings, are

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discussed in details. The author expresses his appreciation to Academicians I.I. Artabolevskiy and V.I. Dikushin for their advice and assistance in preparing this book. In conclusion the author states that the proper operation, lubrication and maintenance of machines are important factors in preventing wear and failure of machine parts. There are no references.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress (TJ1075.D48)

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9-17-58

SOV/122-58-12-27/32

AUTHOR: D'yachkov, A.K., Doctor of Technical Sciences, Professor.

TITLE: The Development of the Hydro-dynamic Theory of Lubrication as Applied to Sliding Bearings (Razvitiye gidrodinamicheskoy teorii smazki primenitel'no k oporam skol'zheniya)

PERIODICAL: Vestnik Mashinostroyeniya, 1958, Nr 12, pp 70-72 (USSR)

ABSTRACT: The work of the appropriate section at the third All-Union Conference on Friction and Wear in machines is reported. Trifonov, Ye.V. of the Kaluga Turbine Works (Kaluzhskiy Turbinnyy Zavod) stated that, by improving the conditions of flow of lubricant and eliminating the opportunity of formation of cavitation and vacuum zones, the permissible mean specific pressure can be sharply increased. Applied to turbo-generator bearings, increasing the oil pressure improves the flow of lubricant. In his tests, the Lecturer increased the pressure in front of the pads up to 10 kg/cm^2. Even for small bearings, the oil pressure should not be less than 0.5-0.7 kg/cm^2. In a combined journal and thrust bearing made at the works. the lubricant is fed from the

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periphery to the centre. No failures of the thrust pads were observed at mean specific pressures below 250 kg/cm^2 and the pads operate successfully even at a temperature of 180°C near the sliding face. In the test rig, the thrust pads operated successfully up to a pressure of 400 kg/cm^2 and a speed of 8000 rpm. According to Konyushiy, N.P., of the "Uralelektroapparat" Works, to increase the permissible specific load in large hydro-electric generators, uniformity of load distribution between the separate pads must be achieved and a correct and powerful oil circulation in the oil bath and between pads must be ensured. Following a proposal by Kostin, K.F., each pad is supported on an elastic element (chamber) filled with lubricant. All chambers are interconnected and constitute a single hydraulic system which permits an equalisation of load independent of deformation in the foundation frame. Utilising developments carried out at the Mechanical Engineering Institute of the Academy of Sciences, the pressure pad has been divided into two

The Development of the Hydro-dynamic Theory of Lubrication as Applied to Sliding Bearings

elements in depth, namely, a thin plate which carries the anti-friction face and a thick and stiff steel plate. The latter is separated from the friction surface and receives a large flow of oil ensuring uniform temperature. The thin plate cannot maintain large temperature differences. A bearing so designed for a generator is operating at 80 kg/cm^2 pressure on the pad. Kaplan, M.Ya., of the "Elektrosila" Works "Imeni Kirova", reported on progressive increases of pressure on bearing pads from 25 to 80 kg/cm^2, achieved in an experimental thrust bearing. To increase the continuity and uniformity of cool lubricant flow to the friction surfaces, the Mechanical Engineering Institute of the Academy of Sciences has successfully used an increased length of the inlet slope (tangentially) and a changed profile of the thrust pad with smoothed corners, around which the oil jet turns when it moves in the inter-pad channel. The inlet slope has the profile of a hyperbola with a smooth transition to the working surface. The centre of the spherical

support is tangentially and radially shifted in relation to the centre of gravity of the working surface area. The same Institute also reported to the Conference on the examination of pressure pads of the hydrostatic type with a given angle of slope in the direction of motion and with self-aligning in the radial direction by means of rocking about a tangentially pointing edge. The optimum slope in the tangential direction is adjusted in manufacture. To reduce the starting friction, oil is fed at high pressure. The high pressure manifold is rigidly connected with the stationary rolling axis of the pads. During operation, the forced circulation of lubricant is discontinued and self-lubrication starts. At a specific bearing pressure of 36 kg/cm^2 and an oil pressure of 90 kg/cm^2, the unsticking coefficient of friction is 0.025. The friction work in starting is sharply reduced (16 times).
Serezhkina, L.P., of the Heat Engineering Institute (Teplotekhnicheskiy Institut) "Imeni Dzerzhinskogo" reported the results of tests with turbo-generator thrust

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bearings when the slope of the pressure pad was varied with the conditions of operation. The ratio of the maximum and minimum thicknesses of the oil layer at the outside edge reached 22 (at a mean specific pressure of 40 kg/cm^2). At the mean radius the ratio was 4-5 and at the inner edge, 2. Pads with a rocking fin parallel to the exit edge are better than those with a rocking fin in the radial direction. Constantinescu, K.N., of Rumania, expressed the opinion that turbulant motion was present in the oil layer of a thrust bearing at high sliding speeds. Using the Prandtl hypothesis on the "mixing length", a method of analysis for the pressure distribution and the carrying capacity of the oil layer was given. The analysis agrees with the experimental results of Smith and Fuller. Kleyman, L.I., of the "Elektrosila" Works, reported on the successful use of incomplete (segmental) self-aligning inserts (freely swivelling on spherical supports) in horizontal reversing induction motors working at variable speeds

The Development of the Hydro-dynamic Theory of Lubrication as Applied to Sliding Bearings

(between 1000 and 20,000 rpm). A paper by Makhovenko, A.I., was devoted to the improvements in heat rejection from thrust bearings. As reported by Alexsandrov, L.I., Artemenko, N.P., Fel'dman, L.M., and Yakovlev, Yu.V., a test rig had been developed at the Khar'kov Aviation Institute (Khar'kovskiy Aviatsionnyy Institut) which permits the examination of large bearings under full-scale conditions (journal diameter up to 500 mm, loads up to 50 tons at speeds up to 9000 rpm). The test rig is equipped with instrumentation to measure the thickness, pressure and temperature of the oil layer. Bulovskiy, N.N., of the North West Correspondence Institute of Engineering (Severo-Zapadnyy Zaochnyy Politekhnicheskiy Institut) reported on a fully instrumented test rig simulating rolling mill bearings arranged on a cantilever bracket. Methods of analysis for the deformation of the bearing inserts and the journal of an end bearing supported in cantilever were given. The simplified assumption of a concentrated force cannot be

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used in this instance. Ivanov, N.P., of the "Elektrosila" Works, proposed a simplified method of evaluation for the mean thickness of the oil layer between the thrust pad and the thrust collar. The method is based on the balance of lubricant let in under the thrust pad and its spreading along the working surface. The author proposed the mean thickness of the oil layer as the criterion of the working capacity of the thrust bearing. Tipey, N., of Rumania, considered the problem of finding the carrying capacity and the friction coefficient of a bearing of infinite length with a sleeve made of porous material. The solution of the problem rests on the assumption that the velocity of motion of the lubricant inside the porous body is small. D'yachkov, A.K., of the Mechanical Engineering Institute of the Academy of Sciences, reported on the analysis of thrust pads with a curved contour at two diagonally opposed corners. Expressions were found for the coordinates of the curved contour and the optimum relation of the pad geometry and the pad location in relation to the thrust collar. Pargin, D.P., of the same

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Institute, reported on methods of analysis for the carrying capacity, the friction torque and friction coefficient of thrust pads with a complex geometry of their plan form, a complex shape of the clearance between the sliding surfaces and with a non-uniform viscosity of the lubricant at different points of the oil layer. The expressions are reduced to a form convenient for computation by electronic computers. In a paper by Kunin, I.A., a method is given for analysing thrust pads in the case when the viscosity of the lubricant is a linear function of the coordinate in the direction of rotation but remains constant in the radial cross-section. Seeking to ensure the thickest possible oil layer, the lecturer proposed a shallow concave profile in the radial cross-section. It was pointed out in discussion that such a profile would make the outflow of lubricant more difficult and so disturb the cooling of the sliding surfaces. Khanovich, M.G., reported on a method of analysis of thrust pads situated both sides of the thrust collar. For simplicity, rectangular plates instead of parts of circular segments were

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assumed and a constant speed of sliding instead of a variable speed was used. Zommer, E.F., gave a method of analysis of the carrying capacity of the oil layer in bearings with incomplete inserts (extent of carrying arc - 120°) and a central direction of a load varying in magnitude. The analysis showed the possibility of operating such bearings under impact loads and reversals without disturbing the conditions of liquid lubrication. Kodnir, D.S., considered the problem of the shape of the clearance between these sliding surfaces. His conclusion was that the maximum carrying capacity of the oil layer prevails at a clearance profile such that the outlet has a sufficiently long section of a constant minimum thickness of the oil layer. The clearance profile can be described by a parabola of a power exceeding two. The quadratic parabola has only a weak effect of this kind. Korovchinskiy, M.V., gave the basic equation for determining the pressure distribution in the case of two infinitely long cylinders separated by a layer of a viscous or an ideally plastic medium. Two cases of

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cylinder motion, namely sliding and head-on motion, were considered. Karatyshkin, S.G., considered the processes taking place in the oil layer of bearings in internal combustion engines for ships under transient speed conditions (rising to a higher speed). Vypov, G.P., communicated a solution of the problem of the velocity and pressure distributions in a thin liquid layer subject to unsteady motion between neighbouring surfaces. The inertia terms had been ignored in this analysis. Poletskiy, A.T., reported on two methods of solving differential equations of unsteady flow of lubricant applicable to the determination of local pressures in the oil layer and of the carrying capacity of the oil layer. In this paper, the inertia terms had been considered. Orgo, N.M., of the Leningrad Metal Works (Leningradskiy metallicheskiy zavod) reported development work on the steady bearings of hydroelectric generators. Extensive

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research had been done in finding the most suitable materials for the thrust pads and the thrust collars of generators working with water lubrication.

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BUSHE, N.A., kand.tekhn.nauk; D'YACHKOV, A.K., prof., doktor tekhn.nauk

Range of efficient utilization of various types of bearing alloys.
Trudy TSNII MPS no.157:4-15 '58. (MIRA 11:11)
(Bearing metals)

D'YACHKOV, A.K.

PHASE I BOOK EXPLOITATION SOV/5055

Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh. 3d, 1958.

Gidrodinamicheskaya teoriya smazki. Opory skol'zheniya. Smazka i smazochnyye materialy (Hydrodynamic Theory of Lubrication. Slip Bearings. Lubrication and Lubricant Materials) Moscow, Izd-vo AN SSSR. 422 p. Errata slip inserted. 3,800 copies printed. (Series: Its: Trudy, v. 3)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Resp. Eds. for the Section "Hydrodynamic Theory of Lubrication and Slip Bearings": Ye. M. Gut'yar, Professor, Doctor of Technical Sciences, and A. K. D'yachkov, Professor, Doctor of Technical Sciences; Resp. Ed. for the Section, "Lubrication and Lubricant Materials": G. V. Vinogradov, Professor, Doctor of Chemical Sciences; Ed. of Publishing House: M. Ya. Klebanov; Tech. Ed.: O. M. Gus'kova.

PURPOSE: This collection of articles is intended for practicing engineers and research scientists.

COVERAGE: The collection, published by the Institut mashinovedeniya AN SSSR (Institute of Science of Machines, Academy of Sciences USSR) contains papers presented at the III Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh (Third All-Union Conference on Friction and Wear in Machines) which was held April 9-15, 1958. Problems discussed were in

Hydrodynamic Theory (Cont.) SOV/5055

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D'YACHKOV, A.K., doktor tekhn.nauk, otv.red.; KNOROZ, M.M., red.izd-va; KOVALEVSKAYA, I.F., tekhn.red.

[Development of the hydrodynamic theory of lubrication applied to sliding thrust bearings] Razvitie gidrodinamicheskoi teorii smazki primenitel'no k upornym podshipnikam skol'zheniia. Moskva, 1959. 151 p. (MIRA 12:11)

1. Akademiya nauk SSSR. Laboratoriya gidrodinamicheskogo treniya.
(Bearings (Machinery)) (Lubrication and lubricants)

DYACHKOV, A.K.

"The Optimum Proportions of the Constructive Elements of the Thrust Bearing."

report to be submitted at the American Society of Lubrication Engineers, Cincinnati, Apr 60.

D'YACHKOV, A.K.

PHASE I BOOK EXPLOITATION SOV/5053

Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh. 3d, 1958.

Iznos i iznosostoykost'. Antifriktsionnyye materialy (Wear and Wear Resistance. Antifriction Materials) Moscow, Izd-vo AN SSSR, 1960. 273 p. Errata slip inserted. 3,500 copies printed. (Series: Its: Trudy, v. 1)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya.
Resp. Ed.: M. M. Khrushchov, Professor; Eds. of Publishing House: M. Ya. Klebanov, and S. L. Orpik; Tech. Ed.: T. V. Polyakova.

PURPOSE: This collection of articles is intended for practicing engineers and research scientists.

COVERAGE: The collection, published by the Institut mashinovedeniya, AN SSSR (Institute of Science of Machines, Academy of Sciences USSR) contains papers presented at the III Vsesoyuznaya Konferentsiya po treniyu i iznosu v mashinakh (Third All-Union Conference on Friction and Wear in Machines) which was held April 9-15, 1958. Problems discussed were in 5 main areas: 1) Hydrodynamic Theory of Lubrication and Friction Bearings (Chairmen: Ye. M. Gut'yar, Doctor of Technical Sciences, and A. K. D'yachkov, Doctor of Technical Sciences); 2) Lubrication and Lubricant Materials (Chairman: G. V. Vinogradov, Doctor of Chemical Sciences); 3) Dry and Boundary Friction (Chairmen: B. V. Deryagin, Corresponding Member of the Academy of Sciences USSR, and I. V. Kragel'skiy, Doctor of Technical Sciences); 4) Wear and Wear Resistance (Chairman: M. M. Krushchov, Doctor of Technical Sciences); and 5) Friction and Antifriction Materials (Chairmen: I. V. Kragel'skiy, Doctor of Technical Sciences, and M. M. Krushchov, Doctor of Technical Sciences). Chairman of the general assembly (on the first and last day of the conference) was Academician A. A. Blagonravov. L. Yu. Pruzhanskiy, Candidate of Technical Sciences, was scientific secretary. The transactions of the conference were published in 3 volumes, of which the present volume is the first. This volume contains articles concerning the wear and wear resistance of antifriction materials. Among the topics covered are: modern developments in the theory and experimental science of wear resistance of materials, specific data on the wear resistance of various combinations of materials, methods for increasing the wear resistance of certain materials, the effects of friction and wear on the structure of materials, the mechanism of the seizing of metals, the effect of various types of lubricating materials on seizing, abrasive wear of a wide variety of materials and components under many different conditions, modern developments in antifriction materials, and the effects of finish machining on wear resistance. Many personalities are mentioned in the text. References accompany most of the articles.

... AND WEAR RESISTANCE

Bushe, N. A., and A. K. D'yachkov. Fields of Rational Use of Various Antifriction Alloys (Sb. "Podshipnikovyye splavy" Trudy VNIIZhDT, vyp. No. 157, under the title "Fields of Rational Use of Various Types of Bearing Alloys" Transzheldorizdat, 1958) 272

Rudnitskiy, N. M. Experience of Using New Antifriction Alloys for Automobile Bearings ("Vestn. mashinostr.", No. 7, 1959) 272

AVAILABLE: Library of Congress

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AC/wrc/os
6/2/61

3

GUT'YAR, Ye.M., prof., doktor tekhn.nauk; otv.red.; D'YACHKOV, A.K., prof., doktor tekhn.nauk, otv.red.; VINOGRADOV, G.V., prof., doktor khim.nauk, otv.red.; KLEBANOV, M.Ya., red.izd-va; GUS'KOVA, O.M., tekhn.red.

[Hydrodynamic theory of lubrication. Sliding supports. Lubrication and lubricants] Gidrodinamicheskaia teoriia smazki. Opory skol'zheniia. Smazka i smazochnye materialy. Moskva, Izd-vo Akad.nauk SSSR, 1960. 422 p. (Trudy Vsesoiuznoi konferentsii po treniiu i iznosu v mashinakh, no.3) (MIRA 14:1)

1. Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh. 3d, 1958.

(Lubrication and lubricants) (Rheology)

S/122/60/000/005/003/017
A161/A130

AUTHOR: D'yachkov, A. K., Professor, Doctor of Technical Sciences

TITLE: Optimum design elements correlation in footstep bearing pillows

PERIODICAL: Vestnik mashinostroyeniya, no. 5, 1960, 16-20

TEXT: The article presents the results of an analysis of conventional (simple) footstep bearing pillow outlined with straight lines and arcs, and a modified (complex) with curves introduced into two opposite corners. The reasons for the analysis are net power losses in friction of steam turbines (4%) and even higher of pumps, and insufficient dependability of plain slider footstep bearings causing breakdowns. The complex pillow makes possible a stronger oil flow with easier drain of hot oil and access for cooled fresh free of foam. The solution was found for the fundamental equation of the motion of thin film of viscous fluid between the footstep pillow and the rotating disc surface. The Fourier method was used for the solution, and the data obtained by Charnes, Siebel and Yang (Ref. 2) were further developed. The analysis led to complex calculations given by A. K. D'yachkov, [Ref. 3, in the collection "Razvitiya gidrodinamicheskoy teorii smazki primenitel'no k upornym podshipnikam skol'zheniya" (Development

Card 1/5

Optimum design elements ...

of the hydrodynamic theory of lubrication as applied to thrust plain bearings), Izd. AN SSSR, 1959], but it was possible to present the equations in the form of products of three factors; the first is dimensionless and presents a function of the correlation of the pillow's geometrical dimensions and incline angle of its work surface to the thrust disc surface; the second is a dimensionless parameter including the specific load, angular rotation velocity and viscosity factor; the third presents a group of terms having dimensions. Only the first factors in calcualtion equations are complex, and they have been calculated to facilitate the work for calculators. It is assumed (Ref. 2) that the oil film height (h) in cross sections equidistant on A - A (Fig. 1) follows the law expressed by the exponential function

$$h = h_o e^{b\theta}$$

where h_o is the minimum oil film height at the outlet; b - a factor characterizing the pillow work face incline to the thrust disc face; θ - angle coordinate of point in radiants. It is stressed that it is less dangerous if the b factor is exaggerated than if it is too low, and advised not to try to find precisely optimum design elements correlation, but use results deviating not more than 10%

Card 2/5

Optimum design elements ...

from optimum. The obtained fields of geometrical value relations are limited by two curved - one for exaggerated values, other for lower than optimum, and when the fields are superimposed, the zone common for both fields indicates the proper values (three or two). Figures 4 and 5 present fields for simple pillow, for a complex one the common zone will be wider. Difficulties at start with pillows being steeply inclined set a limit for the b factor, and it was limited by 4 in the investigation. In the common zone of two fields it does not drop below 3.2, and the relation of the oil film height at the inlet and the outlet pillow end in the common zone is $\sim$ 1.9 for low center angle and higher for higher center angle (reaches up to 8.8); b lower than the bottom boundary of the common zone has an adverse effect on heat in friction surfaces but ensures relatively good work in respect to the oil film load capacity and specific heat release. In the case of a complex pillow the common zone increases, and all three major conditions can be satisfied (sufficient oil film height, moderate temperature on work surfaces, and minimum friction losses). Too low incline angles must not be used, and parallel work surfaces of the pillow and disc are particularly detrimental. A sufficient incline angle of pillow to the disc face is absolutely necessary. There are 5 figures and 3 references: 2 Soviet-bloc and 1 non-Soviet bloc. The reference to the English-language publication reads as follows: Charnes, Siebel, and Yang,

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Optimum design elements ...

On the Solution of the Reynolds Equation for Slider Bearing Lubrication, "Trans. ASME", v. 75, no. 6, 1953, 1125-1132.

Fig. 1: Pillow with complex outline. Legend: (1) - inlet bevel; (2) - disc rotation sense.

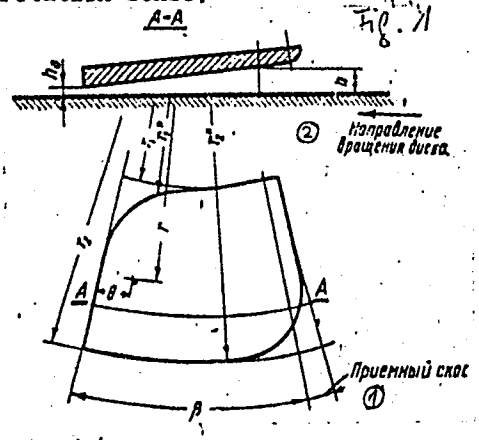

Fig. 4: Fields of the inner and outer pillow radius relation giving operation near to optimum (not more than 10% deviation from the optimum): z_p - load capacity of oil film (minimum film hight); z_{ql} - specific heat release; $z_t; \xi = 1$ - gradient (difference) of inflowing oil at full clearing of the inter-pillow space from worked oil; $z_t; \xi = 0$ - same at poorest clearing of the space from worked oil; A - the common zone in the case of poorest clearing of worked oil from the inter-pillow space; Б - Common zone in the case of perfect clearing of the space from worked oil.

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Optimum design elements ...

Fig. 4:

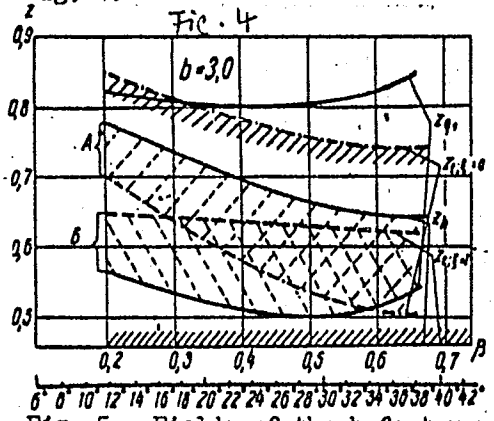

Fig. 5:

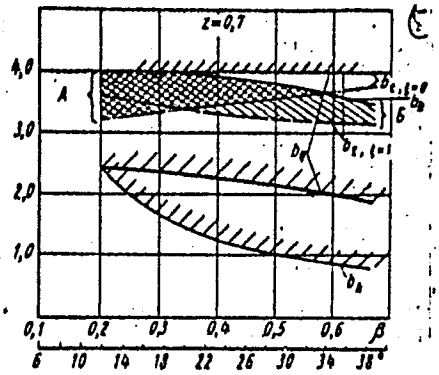

Fig. 5: Fields of the b factor values giving pillow work close to optimum; Legend: b_η - oil film load capacity; b_q - specific heat release; $b_{t;\xi=1}$ - gradient (difference) of the temperature of outflowing and inflowing oil at perfect clearing of worked oil from inter-pillow space; $b_{t;\xi=0}$ - same, at poorest clearing of worked oil. Same symbols as in Fig. 4.

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S/122/60/000/011/010/020
A161/A130

15.8360

AUTHORS: D'yachkov, A.K., Professor, Doctor of Technical Sciences; Letkov, N.L.; Kokorev, A.A.; Belen'kaya, S.V., Candidate of Technical Sciences

TITLE: Bearing material for heavy starting friction

PERIODICAL: Vestnik mashinostroyeniya, 40, no. 11, 1960, 50 - 53

TEXT: A new bearing material for heavy starting loads has been produced and tested. The material consists of "ftoroplast-4" plastic reinforced with tin bronze. Tin powder is sintered to a steel base and impregnated with "ftoroplast--4". The test machine of institut mashinovedeniya AN SSSR (Institute of Machine Science of the Academy of Sciences of the USSR) imitates the work of the thrust bearings of hydrogenerators and enables experiments to be carried out with pillow blocks of sufficient size to study the effect of thermal and pressure deformations. A thrust bearing with pillows coated with new lining withstood start and continuous work under loads up to 110 kg/cm^2 (the test machine permits no higher load). The friction coefficient at 14 to 76 kg/cm^2 load varied between 0.11 and 0.085. The actual advantage of the new bearing material becomes apparent at a

S/122/60/000/011/010/020
A161/A130

Bearing material for heavy starting friction

higher starting load (from 55 kg/cm^2 up). This is due to the peculiar structure of the lining - it is not smooth on the surface and cannot be made smooth by machining, but the surface is resilient and high pressure evens it out. In comparative tests with a hydrostatic bearing (with oil feed on the pillows' work surface under a pressure of 90 kg/cm^2) the new lining had no advantage in respect to the starting friction at specific pressures below 100 kg/cm^2, but at pressures higher than this the advantage was obvious. The achieved safe specific load was nearly double that of the load possible with B-83 (B-83) babbit bearings. There are 4 figures.

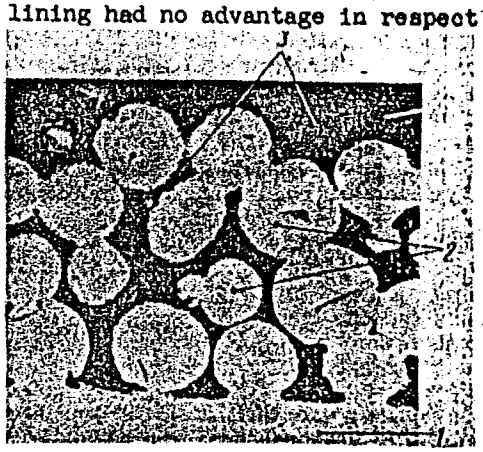


Figure 1: 1 - steel base; 2 - tin bronze powder; 3 - ftoroplast-4.

Card 2/2

ANDREYEV, B.V.; ARTEM'YEV, S.P.; ARKHANGEL'SKIY, V.M; AFANAS'YEV, L.L.; BARKOV, V.F.; BRONSHTEYN, L.A.; BURKOV, M.S.; BURYANOV, V.A..; VARSHAVSKIY, I.L.; VELIKANOV, D.P.; VOINOV, A.N.; VYRUBOV, D.N.; DORMIDONTOV, A.V.; D'YACHKOV, A.K.; YEFREMOV, V.V.; ZHABIN, V.M.; ZELENKOV, G.I.; KALABUKHOV, F.V.; KALISH, G.G.; KRAMARENKO, G.V.; KRASIKOV, S.M.; LAKHTIN, Yu.M.; MIKULIN, A.A.; ORLIN, A.S.; OSTROVSKIY, N.B.; OSTROVTSOV, A.N.; RUBETS, D.A.; STEPANOV, Yu.A.; STECHKIN, B.S.; KHACHATUROV, A.A.; KHOVAKH, M.S.; CHAROMSKIY, A.D.; SHARAPOV, K.A.

Nikolai Romanovich Briling; obituary. Avt.transp. 39 no.4:57 Ap '61. (MIRA 14:5)

(Briling, Nikolai Romanovich, 1876-1961)

D'YACHKOV, A.K., doktor tekhn. nauk, prof., otv. red.; RZHEVSKIY,V.F., red. izd-va; ASTAF'YEVA, G.A., tekhn. red.

[Development of the hydrodynamic theory of the lubrication of bearings of high-speed machinery] Razvitie gidrodinamicheskoi teorii smazki podshipnikov bystrokhodnykh mashin. Moskva, Izd-vo Akad. nauk SSSR, 1962. 221 p. (MIRA 15:8)

1. Akademiya nauk SSSR. Laboratoriya gidrodinamicheskogo treniya.
(Bearings (Machinery))- Lubrication)

D'YACHKOV, A.K., doktor tekhn.nauk,prof.; ZHIROMIRSKIY, V.K., doktor tekhn. nauk; KISLIK, V.A., doktor tekhn.nauk, prof.; KRASNICHENKO, L.V., doktor tekhn. nauk, prof.; KOVALEV, M.P., kand. tekhn. nauk; PARGIN , D.P., kand. tekhn. nauk; PLUTALOVA, L.A., kand.tekhn.nauk; LETKOV, N.L., inzh.; PASHCHENKO, M.P., inzh.; PETRUSEVICH, A.I., doktor tekhn. nauk, prof.; MARENSKAYA, I.Ya., red. izd-va; UVAROV, A.F., tekhn. red.

[International conference on lubrication and wear of machinery; proceedings] Mezhdunarodnaia konferentsiia po smazke i iznosu mashin proceedings. Moskva, Mashgiz, 1962. 658 p. (MIRA 15:5)

1. Conference on Lubrication and Wear, London, 1957.
(Lubrication and lubricants—Congresses)
(Mechanical wear—Congresses)

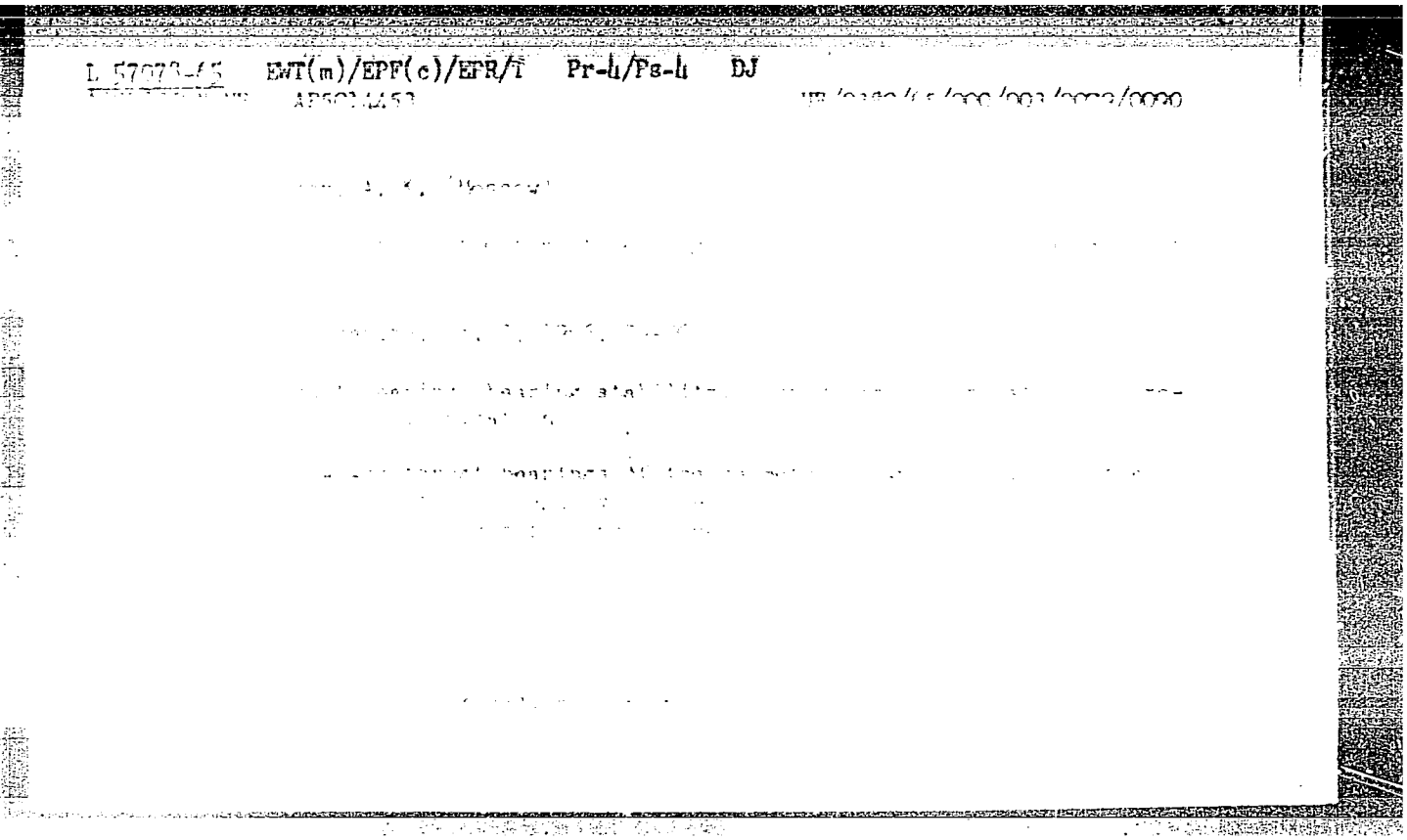
D'YACHKOV, A.K. (Moscow):

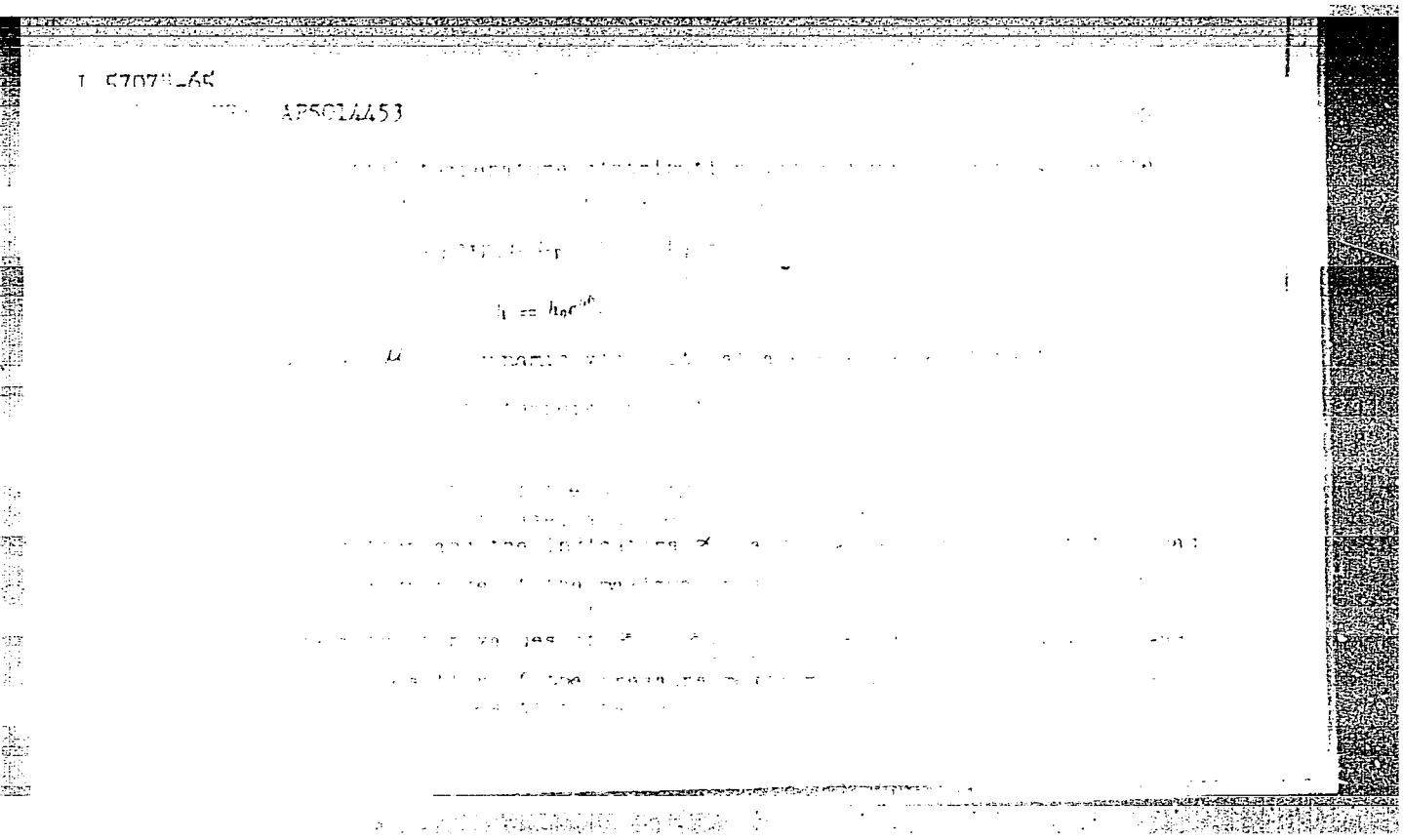
"The solution of Reynolds equation for a certain short slip bearing with the carrying layer of a given cross section."

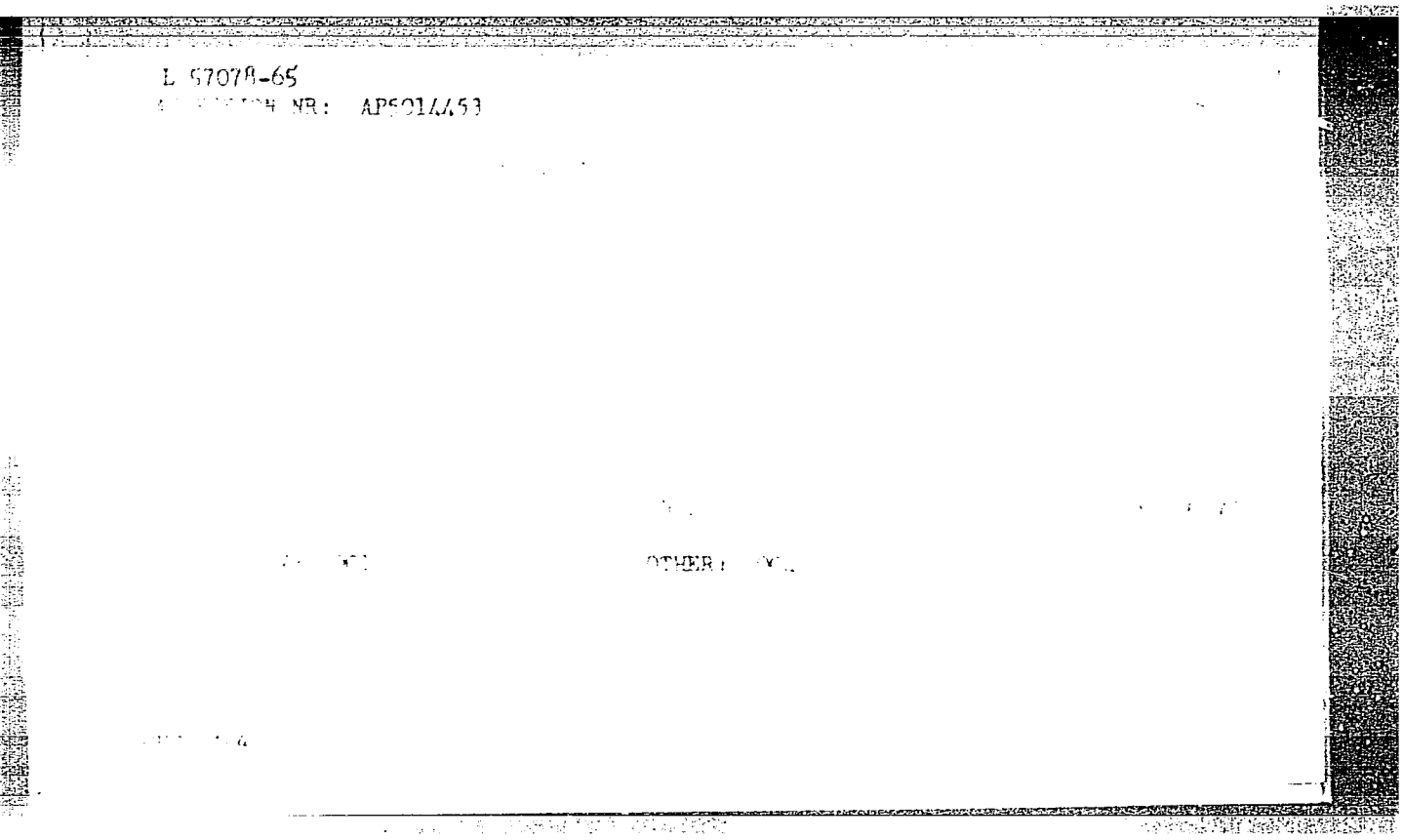
report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

D'YACHKOV, A.K., doktor tekhn.nauk,prof.; MIR-KASIMOV, F.M., inzh.

Investigating the performance of a water-lubricated thrust bearing.
Vest.mashinostr. 44 no.7:34-37 Jl '64. (MIRA 17:9)







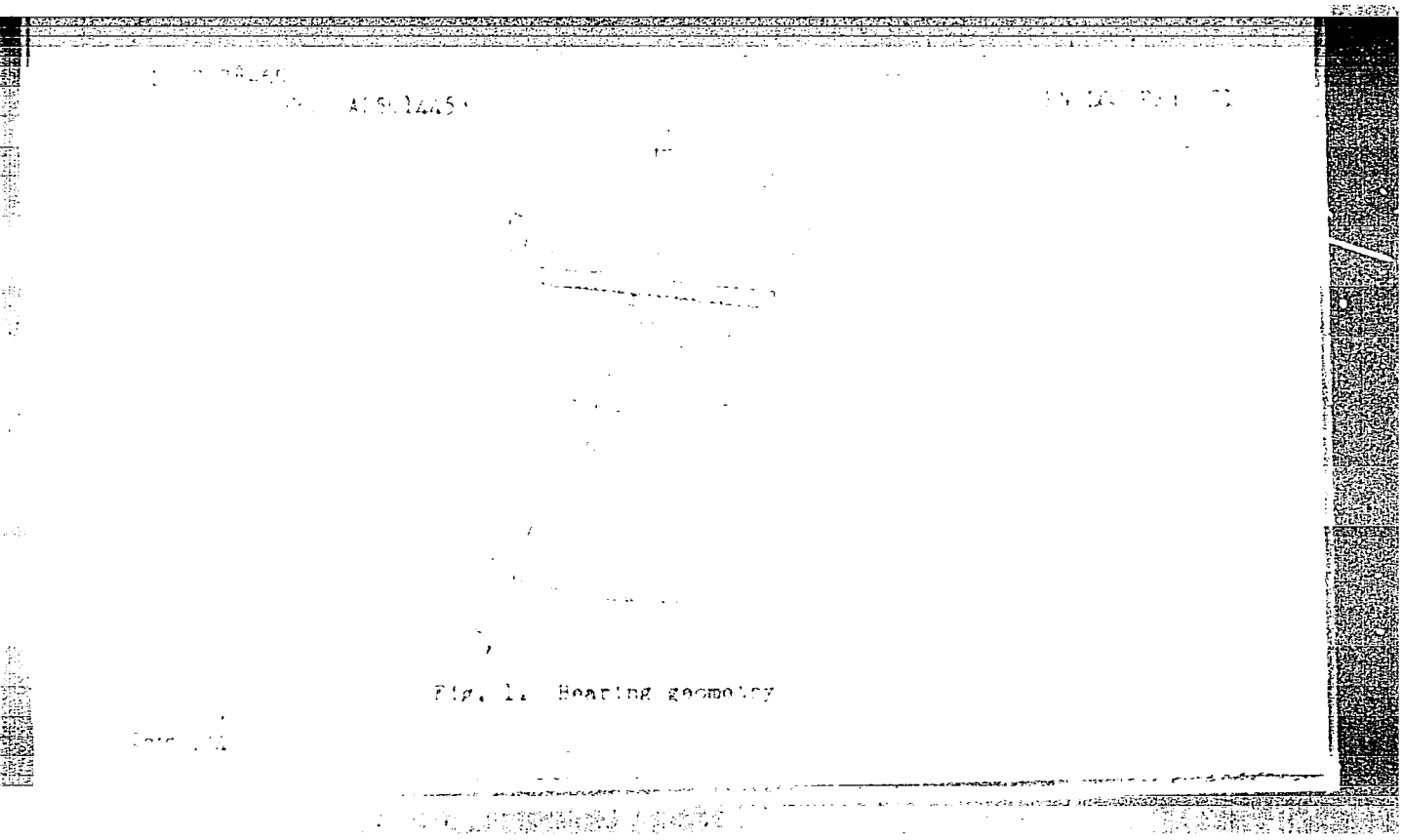
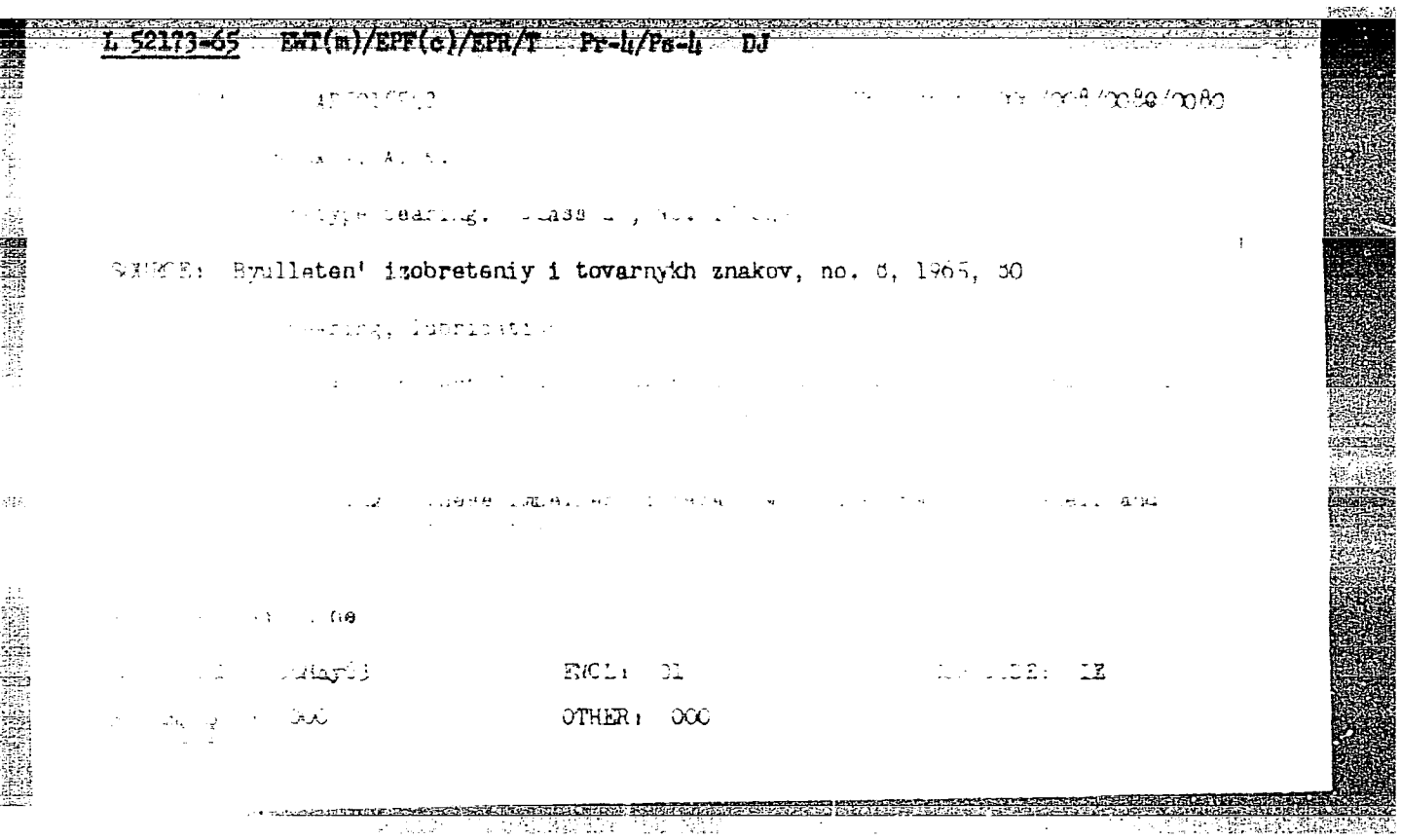


Fig. 1. Bearing geometry



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SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 6, 1965, 50

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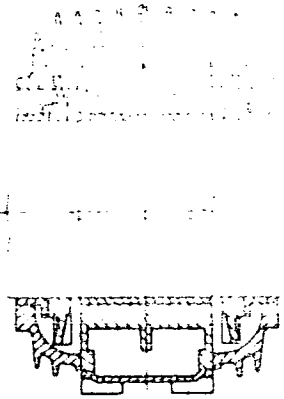


Fig. 1. 1- impeller; 2- shelf

BILIK, Sh.M., doktor tekhn.nauk; D'YACHKOV, A.K., doktor tekhn.nauk; MAKHOVENKO, A.I., inzh.; SHIROKIKH, V.P., inzh.

Antifriction materials for the end thrusts of diesel locomotives based on the compositions of stannous bronze and fluoroplast. Trudy TSNII MPS no.283:148-160 '64. (MIRA 18:4)

D'YACHKOV, A.K. (Moskva)

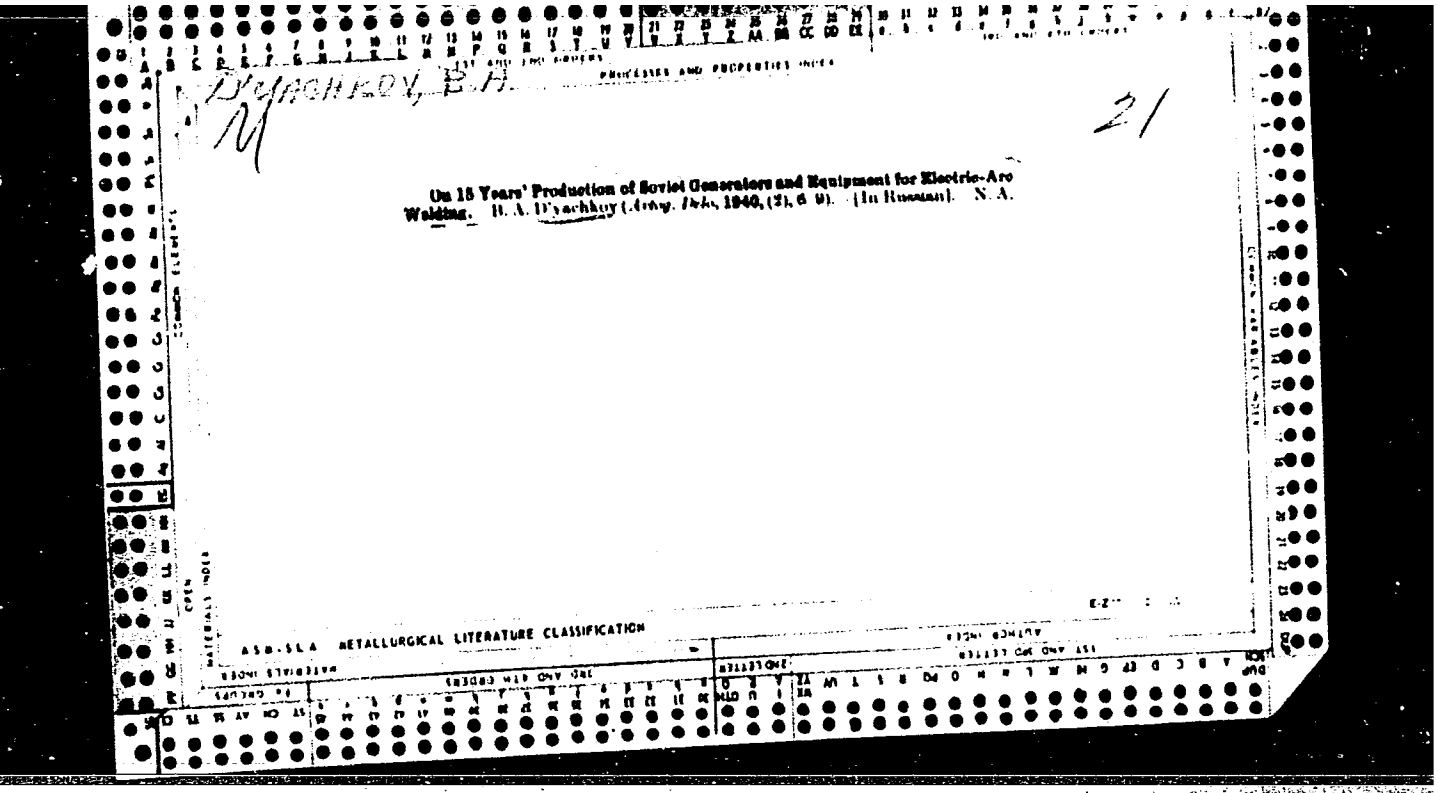
Some conclusions from the theory of lubrication of thrust bearings in case of a variable viscosity of the oil film. Mashinovedenie no.3:79-90 '65. (MIRA 18:6)

LEVINA, Antonina Andreyevna; D'YACHKOV, Aleksey Mikhaylovich; CHALKHUSH'YAN, L.F., red.; GODEYCHIK, G.M., red.; SHAPENKOVA, T.A., tekhn.red.

[Automatic loom (AT2-120-ShL) for silk weaving] Avtomaticheskii shelkotkatskii stanok AT2-120-ShL. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po legkoi promyshl., 1959. 81 p. (MIRA 12:8)
(Looms) (Silk)

D'YACHKOV, A.V., inzh.

Designing and operating water-supply installations in Poland. Gor.khoz.Mosk. 36 no.11:41-43 N '62. (MIRA 15:12)
(Poland—Water-supply engineering)



Dyachkov, B.A.

21

Us 15 Years' Production of Soviet Generators and Equipment for Electric-Arc Welding. B. A. D'yachkov (Avtog. Delo, 1940, (2), 6 pl). [In Russian]. N. A.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

D'YACHKOV, B. A.

Name: D'YACHKOV, B. A.

Dissertation: Study of a welding generator with series demagnetizing winding and self excitation

Degree: Cand Tech Sci

~~Affiliation~~ Defended at: Min Higher Education USSR, Leningrad Polytechnic Inst imeni M. I. Kalinin

~~Defense~~ Publication Date, Place: 1956, Leningrad

Source: Knizhnaya Letopis', No 45, 1956

D'YACHKOV, B. A.

"Power Sources for Welding Fusible and Infusible Electrodesdeveloped at VNIESO,"

paper presented at All-Union Scienctific-Technical Conference on Welding in Shielding Gases, Leningrad, Dec 1957.

(Svarochnoye Proizvodstvo, 1958, No. 4, pp 46-47 - author Tyul'kov, M. D.)

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S/110/60/000/010/007/014
E194/E455

1.5400

AUTHORS: D'yachkov, B.A., Candidate of Technical Sciences, Zaks, M.I., Engineer and Ryvkin, A.L., Engineer

TITLE: A Universal Welding Rectifier With a Wide Range of Control of Voltage and Current

PERIODICAL: Vestnik elektropromyshlennosti, 1960, No.10, pp.36-41

TEXT: The main technical requirements applicable to supply sources for automatic welding in inert gas are formulated: the volt-ampere characteristics must be flat in the working range; smooth control of output voltage under load must be possible; the output voltage must be automatically stabilized against load variations and input voltage variations; the no-load voltage must be high enough to strike an arc reliably and the dynamic characteristics must be satisfactory. It is also generally desirable that the supply should be able to provide a family of drooping characteristics for manual arc welding. Several methods of obtaining flat volt-ampere characteristics are considered and

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E194/E455

A Universal Welding Rectifier With a Wide Range of Control of Voltage and Current

dismissed in turn because of various defects. A universal supply having either level or drooping volt-ampere characteristics can be obtained from a static supply source consisting of a step-down three-phase transformer, a variable inductance and a rectifier unit. The inductance is in series with the high- or low-voltage side of the transformer and the load is supplied through the rectifier. This gives a family of naturally drooping external characteristics, each curve corresponding to a certain value of inductance. Flat volt-ampere characteristics are obtained by automatically altering the inductance of the power circuit with the load. The principles underlying this idea are explained. The most suitable form of variable inductance is a saturating choke which can be used to provide flat external characteristics by alteration in the inductance of the choke. A schematic circuit diagram of the equipment is given and explained. If it is necessary to improve the dynamic characteristics of the equipment, a power magnetic amplifier of suitable design may be used as a variable inductance.
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S/110/60/000/010/007/014
E194/E455

A Universal Welding Rectifier With a Wide Range of Control of Voltage and Current

There is a circuit diagram of a 300 A experimental equipment with this feature. By throwing a switch, suitable flat characteristics are obtained. The natural drooping external characteristics are plotted. The technical and economic characteristics of welding rectifiers built according to this circuit depend upon the desired range of control of stabilized voltage and on the limits of current control. If it is necessary to control voltage and current over a wide range it is best to have two ranges of control by altering the no-load voltage of the equipment. Technical data of prototype equipment are given and, for example, the rated voltage of 30 V may be altered from 17 to 34 V and the welding current from 50 to 320 A. The prototype welding set was of good performance with both automatic and manual welding. The set is a little larger and less efficient than previous sets but this is compensated by its universality. The weight could be appreciably reduced if the control range were not so wide. There are

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S/110/60/000/010/007/014
E194/E455

A Universal Welding Rectifier With a Wide Range of Control of Voltage and Current

7 figures and 1 table.

SUBMITTED: January 11, 1960

Card 4/4

D'YACHKOV, B.A., kand.tekhn.nauk; PECHENIN, A.A., inzh.; FEDER, Ye.S., inzh.; GALOYAN, G.M., inzh.

New welding transformers for manual arc welding. Svar. proizv. no.5: 33-35 My '61. (MIRA 14:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut elektrosvarochnogo oborudovaniya (for D'yachkov, Pechenin, Feder). 2. Leninakanskiy elektrotekhnicheskiy zavod (for Galoyan).
(Electric welding—Equipment and supplies)

S/125/61/000/006/009/010
D040/D112

AUTHORS: D'yachkov, B. A., Zaks, M. I., Ryvkin, A. L.

TITLE: Welding rectifier with elastive and falling characteristics

PERIODICAL: Avtomaticheskaya svarka, no. 6, 1961, 63-72

TEXT: VNIIESO has developed a new ВСУ (VSU) type welding rectifier suitable for automatic gas-shielded as well as for manual arc welding. The first VSU-300 and VSU-500 units have been completed, and production is planned to start during 1961. The circuit diagram (Fig. 1) and photograph (Fig. 10) (with removed casing) of the VSU-300 are given, and its operation is described. The VSU represents an improvement, for the existing Soviet rectifiers do not adjust the work voltage smoothly under load and work with other than elastive characteristics. The VSU includes special saturation chokes. Its universal, i.e. both elastive and steep falling characteristics are obtained from a feed source consisting of a step-down transformer, saturation choke and semiconductor rectifier unit. The output voltage of the rectifier remains stable within 1 v at 5 to 10% voltage variations in the network. Two graphs show the elastive and the steep falling characteristics (Fig. 2 and 3). The technical data are (Table 3):

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Welding rectifier with elastive and ...

	VSU-300		VSU-500	
	Elastive	Falling	Elastive	Falling
Network voltage		220 / 380 v		
Rated welding current, amp	300	200	500	350
Operation time (%)	60	60	60	60
Rated work voltage, v	35	30	40	30
No-load voltage, v	53-65	65	52-68	68
Welding current range limits, amp....	50-330	25-240	90-550	50-350
Welding voltage range, v.....	17-35	-	20-40	-
Efficiency, %	68	63	70	66
No-load losses, w	600	500	900	700
Outer dimensions, mm	910 x 612 x 960		1186 x 593 x 1017	
Weight, kg	320		420	

The VSU rectifiers have aluminum windings, and their efficiency is higher and the no-load losses lower than in analogous motor-generator units. There are 10 figures, 3 tables and 4 Soviet references.

ASSOCIATION: VNIIESO

SUBMITTED: December 12, 1960

Card 2/5

D'YACHKOV, B.A.; ZAKS, M.I.; RYVKIN, A.L.

Welding rectifier with elastance and drooping characteristics.
Avtom. svar. 14 no.6:63-72 Je '61. (MIRA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut elektrosvarochnogo oborudovaniya.
(Electric welding—Equipment and supplies)

S/120/63/000/001/003/072
E032/E314

AUTHORS: D'yachkov, B.A. and Oparin, Ye.M.

TITLE: A low-voltage generator of monochromatic neutrons

PERIODICAL: Pribory i tekhnika eksperimenta, no. 1, 1963, 23 - 26

TEXT: A low-voltage neutron generator is described, capable of producing monochromatic neutron fluxes of 3×10^9 sec^{-1} at 2.5 MeV and 10^{11} - 2×10^{11} sec^{-1} at 14 MeV. The accelerating tube provides a deuteron beam (200 keV, 5 mA). The ion source is similar to that described by Eubank et al (Rev. Scient. Inst. um., 1954, 25, 989). A sectional drawing of the tube is shown in Fig. 1 (1 - focusing lens and ion source, 2-3 - accelerating section, 4 - electrostatic screen, 5-6 - permanent magnets, 7 - magnetic analyzer chamber, 8 - water-cooled copper screen with tungsten diaphragms and 9 - zirconium target saturated with deuterium or tritium and used for the D(t,n)He^4 and D(d,n)He^3 reactions. The basic circuit of the stabilized EHT unit is reproduced. It is in the form of a voltage multiplier fed from

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A low-voltage generator ....

S/120/63/000/001/003/072
E032/E314

a 2.5 kc/s vacuum-tube oscillator. The maximum output is 50 kV at 20 mA. A ± 0.15% stabilization over 6 hours is ensured. The neutron generator has been in use since 1958. There are 3 figures.

SUBMITTED: April 26, 1962

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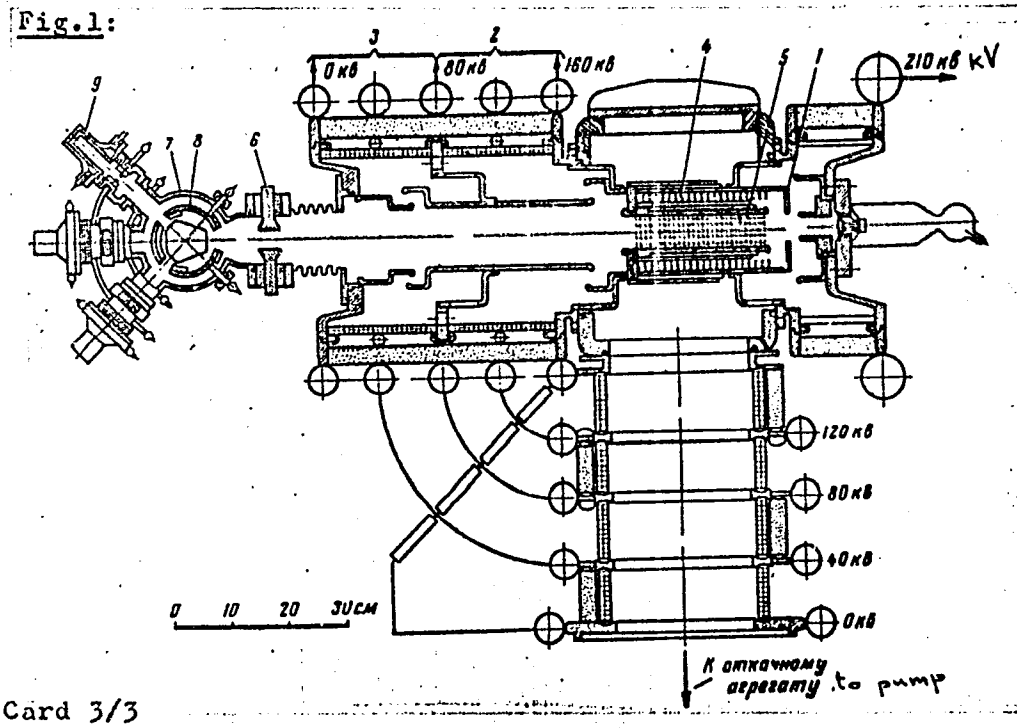
Fig.1:



A low-voltage..

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L 28362-66 EWT(m) IJP(c)

ACC NR: AP6013486 SOURCE CODE: UR/0120/66/000/002/0017/0018

AUTHOR: D'yachkov, B. A.; Nasonov, A. V.

ORG: none

TITLE: Hydrogen ion accelerator

SOURCE: Pribory i tekhnika eksperimenta, no. 2, 1966, 17-18, and insert following p. 18

TOPIC TAGS: ion accelerator, hydrogen ion, magnetic lens, focusing accelerator, ion beam focusing

ABSTRACT: The authors describe a direct-action accelerator with a high-frequency ion source which gives a hydrogen ion acceleration current of 6 ma at 450 kv in continuous-duty operation. A schematic sectional drawing of the acceleration tube is shown. A working vacuum of $2 \cdot 10^{-5}$ mm Hg is maintained in the tube by a pumping system with a capacity of 2500 l/sec. The focusing lens and accelerating sections are supplied from separate hv rectifiers with maximum voltages of 130 and 380 kv respectively. The working gradient along the outside surface of the tube is 4.5 kv/cm. To dispose of electron loading and eliminate scattered ions, the ion beam which is performed by the ion condenser and focusing lens is irised down before the input to the accelerating sections so that very few ions are passed on to the electrodes of the tube. Under op-

UDC: 539.1.076

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L 28362-66

ACC NR: AP6013486

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timum focusing conditions, the electron loading is only a few percent of the ion current so that a high-impedance voltage divider could be used for balancing the electrode voltage. A magnetic trap eliminates electron loading in the gap of the focusing lens. The combined action of the magnetic fields on the ion beam is compensated so that the beam of ions enters the accelerating sections along the axis of the tube. A quadrupole lens is used for focusing the ion beam on the target. The diameter of the beam at the target is less than 10 mm. Tests with a deutron current of 2.4 ma at a voltage of 390 kv gave a 2.5 mev neutron stream with an intensity of $2 \cdot 10^{10}$ neutrons/sec. Participating in the work were V. P. Zyuzin and V. P. Kovalev. Orig. art. has: 2 figures. [14]

SUB CODE: 20/ SUBM DATE: 13Nov64/ ORIG REF: 001/ OTH REF: 003/ ATD PRESS: 4262

Card 2/2 CC

L 45790-66 EWT(1) AT

ACC NR: AP6030125 SOURCE CODE: UR/0120/66/000/004/0032/0035

AUTHOR: D'yachkov, B. A.; Nasonov, A. V.

50
B

ORG: none

TITLE: High-power r-f ion source

SOURCE: Pribory i tekhnika eksperimenta, no. 4, 1966, 32-35

TOPIC TAGS: ion source, hydrogen ion, ion emission

ABSTRACT: The development of a new ion source, (see figure) with hydrogen-ion current up to 10 ma is described. The source having a long life and relatively little hydrogen consumption, was tested under two sets of conditions: (1) Resonance, 15 Mc, 20 oe, 1200 v, 300--400 w in the discharge; (2) Resonance, 36 Mc, 60 oe, 2500 v, 100--150 w in the discharge. The ion beam composition could be varied by changing the pressure in the discharge chamber; lower pressures resulted in higher H_2^+ ion contant, while higher pressures yielded higher H_3^+ content; the proton content was at best 50%. Under different conditions, the proton content was brought up to 80% with a hydrogen consumption of 100 cm^3/hr. After 500 hrs, the chamber contamination was still low, and the source continued its stable operation. "In conclusion, the authors wish to thank G. A. Gornitsyn and V. I. Zinenko for their help in carrying out the work." Orig. art. has: 2 figures and 1 table. [03]

SUB CODE: 20 / SUBM DATE: 30Jun65 / ORIG REF: 004 / OTH REF: 001/ ATD PRESS: 5085

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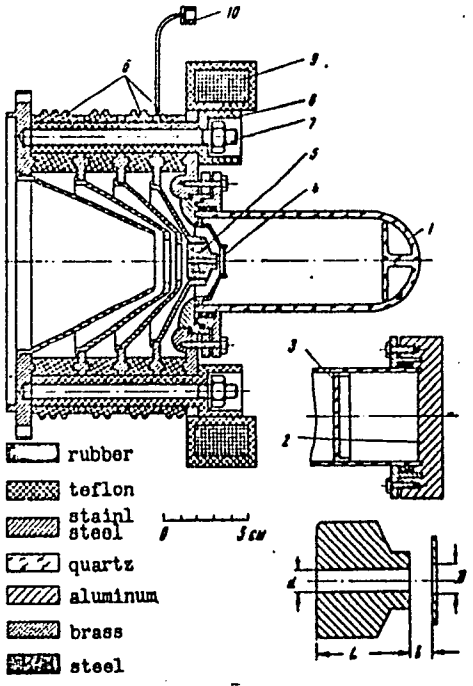


Fig. 1. High-power r-f ion source

1 - Discharge chamber; 2 - metal cap; 3 - quartz disk; 4 - anode diaphragm; 5 - probe; 6 - insulators; 7 - studs; 8 - insulating bushings; 9 - electromagnet; 10 - tubing for admission of hydrogen.

GLINKOV, M.A.; D'YACHKOV, B.G.

Connection between ionization and heat emission during the burning by torch of methane-bearing gas. Izv.vys.ucheb.zav.; chern.met. 5 no.11:181-187 '62. (MIRA 15:12)

1. Moskovskiy institut stali i splavov.
(Gas torches) (Ionization of gases)

GLINKOV, M.A.; D'YACHKOV, B.G.

Comparison of certain burner arrangements by their ionizing characteristics. Izv.vys.ucheb.zav.; chern.met. 6 no.1:179-184 '63. (MIRA 16:2)

1. Moskovskiy institut stali splavov.
(Gas burners) (Ionization of gases)

D'YACHKOV, B.G., kand. tekhn. nauk

Gas-electric burner. Stal' 24 no.5:466-467 My '64.
(MIRA 17:12)

D'YACHKOV, B.G.

Determining the volumetric heat stress of a flame. Gaz. delo no.12:37-38 '64. (MIRA 18:2)

KORNETOV, N.I.; D'YACHKOV, D.D., glavnyy metodist; GRIGOR'YEV, V.V., otvetstvennyy redaktor; SAVZDARG, V.E., redaktor; BALLOD, A.I., tekhnicheskiy redaktor

["Tartar A.S.S.R." pavilion; a guidebook] Pavil'on "Tatarskaia ASSR"; putevoditel'. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 27 p. (MLRA 9:8)

1. Moscow. Vsesoyuznaya sel'skokhozyaystvennaya vystavka, 1954-
2. Direktor pavil'ona (for Kornetov)
(Tatar A.S.S.R.--Agriculture)
(Moscow--Agricultural exhibitions)

D'yachkov, D.T.

KUBAREV, M.V., dotsent; D'YACHKOV, D.T.

Prevention of pyodermitis in workers employed by the machine-building industry. Vest. ven. i derm 30 no.1:23-25 Ja-F '56 (MLRA 9:4)

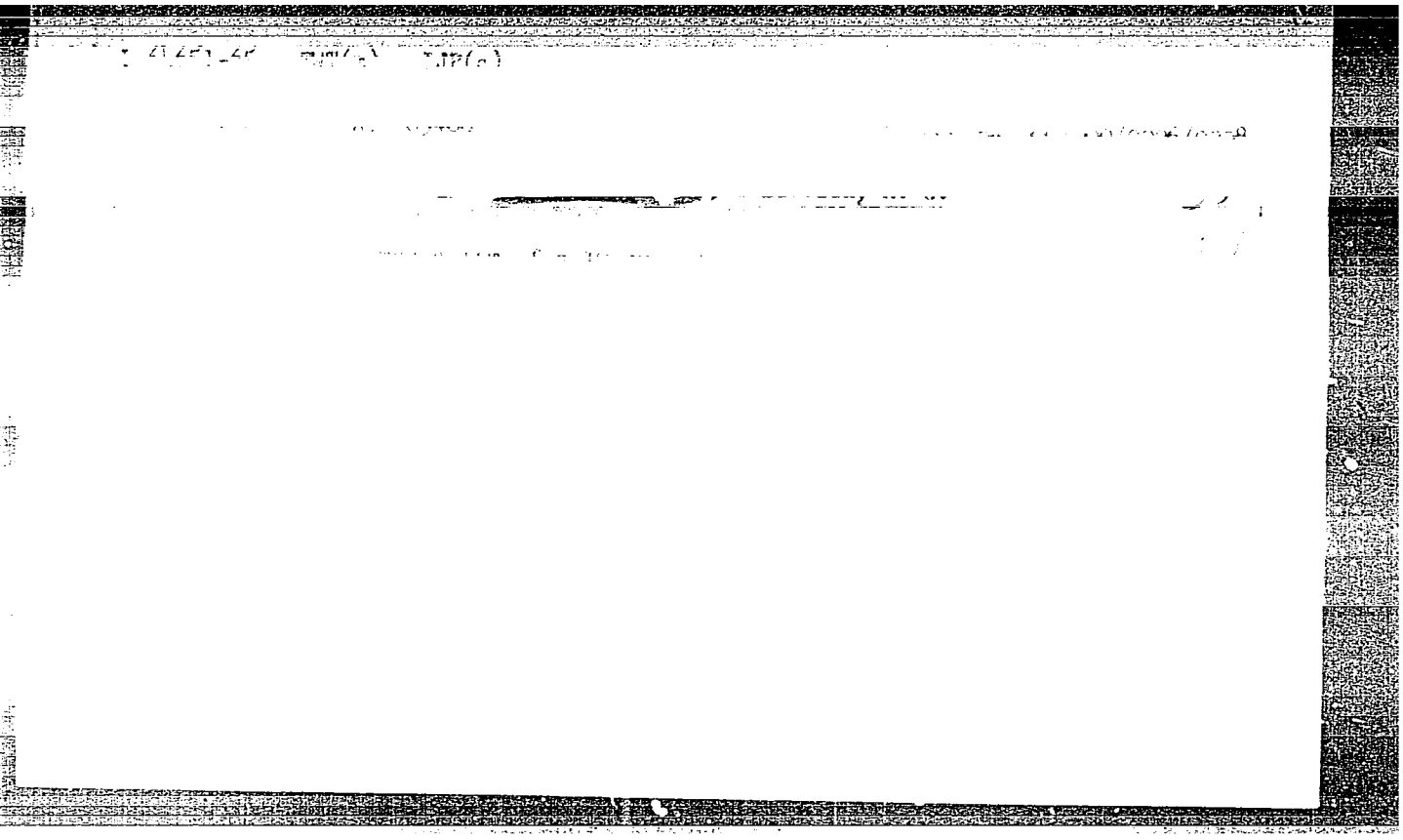
1. Iz kliniki kozhnykh i venericheskikh bolezney Kuybyshevskogo meditsinskogo instituta (zav. kafedroy-prof. A.S. Zenin) i mediko-sanitarnoy chasti (nach. M.Ye. Poltoratskaya)

(SKIN DIS, dis. Pyoderma, prev. and control
piodermitis, prev. in indust. workers)
(INDUSTRIAL HYGIENE
pyoderma
prev. of piodermitis in workers)

ZENIN, B.A., doktor med. nauk; D'YACHKOV, D.T.

Experience with the prevention of pyoderma in workers of metal-processing industry. Vest. derm. i ven. 37 no.8:63-65 Ag'63 (MIRA 17:4)

1. Kafedra kozhnykh i venericheskikh bolezney (zav. - prof. A.S. Zenin) Kuybyshevskogo meditsinskogo instituta.



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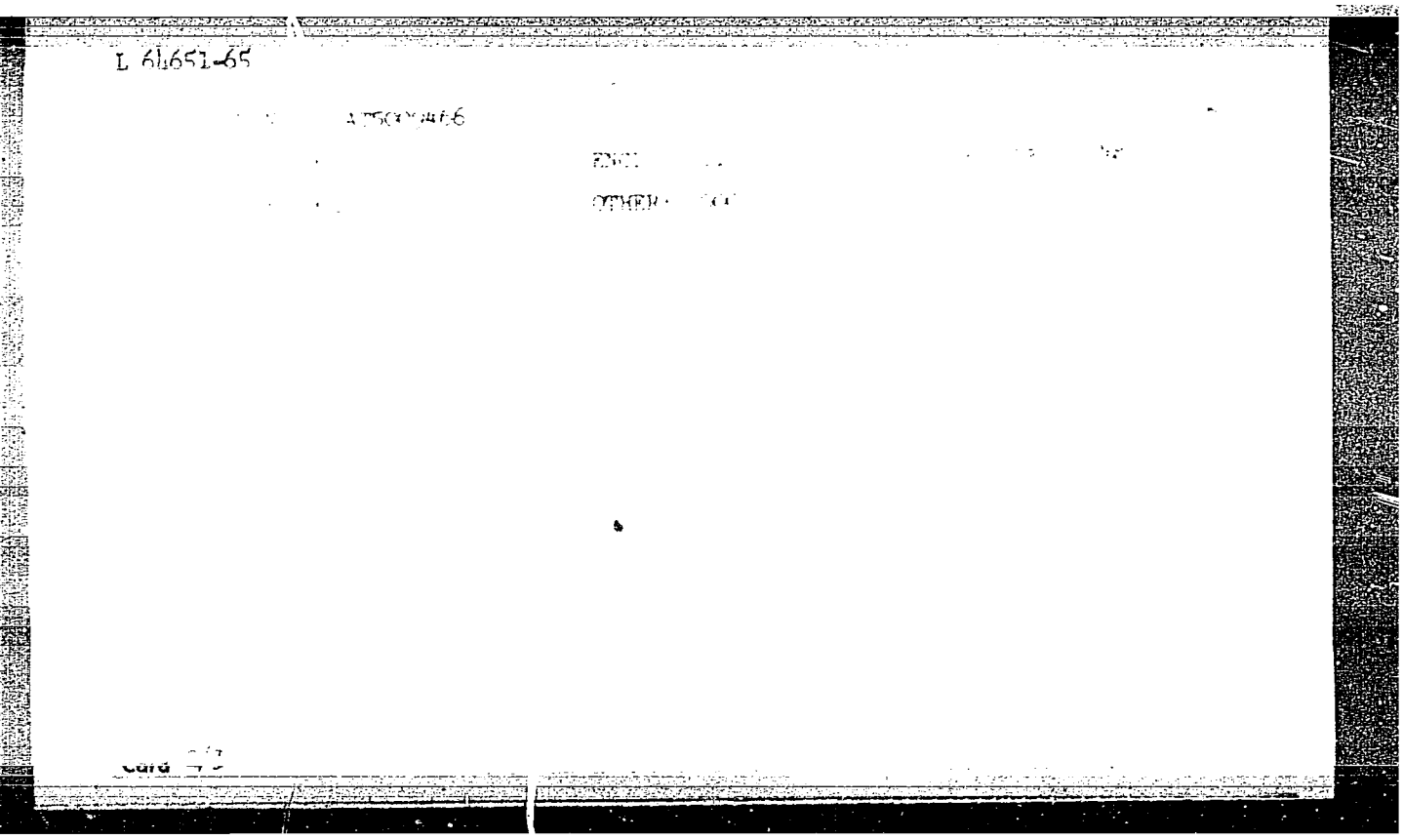

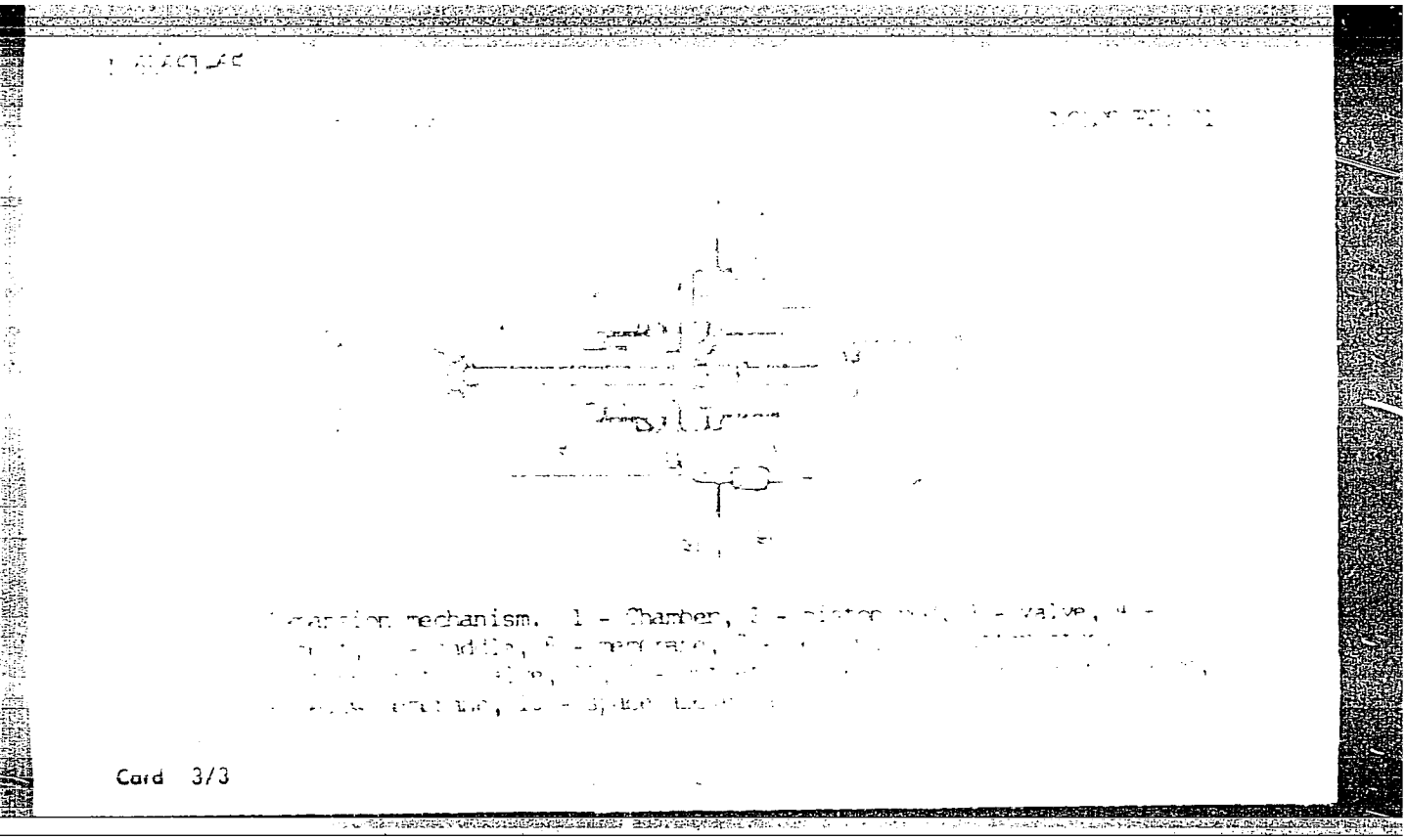

...mechanism. 1 - Chamber, ... - valve, ... -

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D'YACHKOV, G., inzhener.

Tool for flange bending. Mast.ugl. 5 no.2:19 F '56. (MLRA 9:6)
(Pipe flanges)

D'YACHKOV, G., inzhener.

Improving the working of coal terraces. Mast ugl. 5 no.11:17-18 N '56. (MLRA 10:1)

(Coal mines and mining)

D'YACHKOV, G., starshiy prepodavatel' politekonomii

Monetary compensation for work in order to improve the collective farm economy. Sots. trud 4 no.11:116-123 N 59. (MIRA 13:4)

1. Smolenskiy pedagogicheskiy institut.
(Smolensk Province--Collective farms--Income distribution)